

=> fil reg

FILE 'REGISTRY' ENTERED AT 11:05:07 ON 23 AUG 2006

=> d his

FILE 'HCAPLUS' ENTERED AT 08:06:20 ON 23 AUG 2006

L1 1 S US20050283027/PN
SEL RN

FILE 'REGISTRY' ENTERED AT 08:06:44 ON 23 AUG 2006

L2 13 S E1-E13
L3 STR
L4 50 S L3
L5 SCR 2043
L6 50 S L3 NOT L5
L7 SCR 1918
L8 50 S L3 NOT (L5 OR L7)
L9 STR L3
L10 50 S L9
L11 STR L3

FILE 'CASREACT' ENTERED AT 08:24:11 ON 23 AUG 2006

L12 STR L11
L13 0 S L12 SAM

FILE 'REGISTRY' ENTERED AT 08:37:12 ON 23 AUG 2006

L14 1 S 109-87-5/RN
L15 1 S 110-18-9/RN
L16 1 S 644-97-3/RN
L17 1 S 2176-06-9/RN
L18 1 S 7440-23-5/RN
L19 1 S 609338-68-3/RN
L20 1 S 706783-55-3/RN
L21 1 S 609338-67-2/RN
L22 1 S 609338-69-4/RN
L23 1 S 706783-57-5/RN

FILE 'HCAPLUS' ENTERED AT 08:50:46 ON 23 AUG 2006

L24 3 S L19
L25 1 S L20
L26 2 S L21
L27 2 S L22
L28 2 S L23
L29 4 S L24-L28
L30 1798 S L16
L31 13 S L17
L32 221262 S L18
L33 1810 S L30 OR L31
L34 11 S L33 AND L32

FILE 'CASREACT' ENTERED AT 09:00:48 ON 23 AUG 2006

L35 STR L12
L36 27 S L35 SAM
L37 STR L35
L38 15 S L37 SAM
L39 STR L37
L40 7 S L39 SAM

FILE 'HCAPLUS' ENTERED AT 09:46:08 ON 23 AUG 2006

L41 0 S L34 AND CYCLOORGANYLPHOSPH?

L42 0 S L34 AND CYCLO(A) PHOSPH?
 L43 0 S L34 AND CYCLOORGAN!!PHOSPH?
 L44 1 S L34 AND CYCLOORGANOPHOSPH?
 L45 2 S CYCLOORGANOPHOSPH?
 L46 5 S L29 OR L41-L45

FILE 'REGISTRY' ENTERED AT 09:50:42 ON 23 AUG 2006

L47 1 S 3376-52-1/RN

FILE 'CASREACT' ENTERED AT 10:12:26 ON 23 AUG 2006

L48 1 S 141:63881/AN
 L49 634 S L37 FUL
 L50 1 S L49 AND L48
 SAV L49 NWA372/A
 L51 7 S L39 SAM SUB=L49
 L52 149 S L39 FUL SUB=L49
 L53 SCR 1967
 L54 SCR 1936 OR 1956
 L55 5 S L39 AND (L53 OR L54) SAM SUB=L49
 L56 94 S L39 AND (L53 OR L54) FUL SUB=L49
 L57 1 S L56 AND L48
 L58 81 S L56 AND (1940-2002)/PRY,AY,PY
 L59 1 S L58 AND CYCLOORGANO?
 L60 STR L39
 L61 0 S L60 SAM SUB=L49
 L62 11 S L60 FUL SUB=L49
 L63 STR L39
 L64 0 S L63 SAM SUB=L49
 L65 4 S L63 FUL SUB=L49
 L66 13 S L62 OR L65
 L67 STR L39
 L68 1 S L67 AND (L53 OR L54) SAM SUB=L49
 L69 33 S L67 AND (L53 OR L54) FUL SUB=L49
 L70 24 S L69 AND (1940-2002)/PRY,AY,PY
 L71 27 S L66 OR L70
 L72 1 S L71 AND L48

=> d que 146

L16 1 SEA FILE=REGISTRY ABB=ON 644-97-3/RN
 L17 1 SEA FILE=REGISTRY ABB=ON 2176-06-9/RN
 L18 1 SEA FILE=REGISTRY ABB=ON 7440-23-5/RN
 L19 1 SEA FILE=REGISTRY ABB=ON 609338-68-3/RN
 L20 1 SEA FILE=REGISTRY ABB=ON 706783-55-3/RN
 L21 1 SEA FILE=REGISTRY ABB=ON 609338-67-2/RN
 L22 1 SEA FILE=REGISTRY ABB=ON 609338-69-4/RN
 L23 1 SEA FILE=REGISTRY ABB=ON 706783-57-5/RN
 L24 3 SEA FILE=HCAPLUS ABB=ON L19
 L25 1 SEA FILE=HCAPLUS ABB=ON L20
 L26 2 SEA FILE=HCAPLUS ABB=ON L21
 L27 2 SEA FILE=HCAPLUS ABB=ON L22
 L28 2 SEA FILE=HCAPLUS ABB=ON L23
 L29 4 SEA FILE=HCAPLUS ABB=ON (L24 OR L25 OR L26 OR L27 OR
 L28)
 L30 1798 SEA FILE=HCAPLUS ABB=ON L16
 L31 13 SEA FILE=HCAPLUS ABB=ON L17
 L32 221262 SEA FILE=HCAPLUS ABB=ON L18
 L33 1810 SEA FILE=HCAPLUS ABB=ON L30 OR L31
 L34 11 SEA FILE=HCAPLUS ABB=ON L33 AND L32
 L41 0 SEA FILE=HCAPLUS ABB=ON L34 AND CYCLOORGANYLPHOSPH?

L42 0 SEA FILE=HCAPLUS ABB=ON L34 AND CYCLO(A) PHOSPH?
 L43 0 SEA FILE=HCAPLUS ABB=ON L34 AND CYCLOORGAN!!PHOSPH?
 L44 1 SEA FILE=HCAPLUS ABB=ON L34 AND CYCLOORGANOPHOSPH?
 L45 2 SEA FILE=HCAPLUS ABB=ON CYCLOORGANOPHOSPH?
 L46 5 SEA FILE=HCAPLUS ABB=ON L29 OR (L41 OR L42 OR L43 OR
 L44 OR L45)

=> fil hcap

FILE 'HCAPLUS' ENTERED AT 11:05:22 ON 23 AUG 2006

=> d l46 1-5 ibib abs hitstr hitind

L46 ANSWER 1 OF 5 HCAPLUS COPYRIGHT 2006 ACS on STN

ACCESSION NUMBER: 2005:141077 HCAPLUS

DOCUMENT NUMBER: 142:219415

TITLE: Process for preparing acylphosphines and derivatives thereof

INVENTOR(S): Sommerlade, Reinhard H.; Boulmaaz, Souad;
 Wolf, Jean-Pierre; Geier, Jens; Gruetzmacher,
 Hansjoerg; Scherer, Markus; Schoenberg,
 Hartmut; Stein, Daniel; Murer, Peter;
 Burkhardt, Stephan

PATENT ASSIGNEE(S): Ciba Specialty Chemicals Holding Inc., Switz.

SOURCE: PCT Int. Appl., 59 pp.

CODEN: PIXXD2

DOCUMENT TYPE: Patent

LANGUAGE: English

FAMILY ACC. NUM. COUNT: 1

PATENT INFORMATION:

PATENT NO.	KIND	DATE	APPLICATION NO.	DATE
WO 2005014605	A1	20050217	WO 2004-EP51427	2004 0709
W:	AE, AG, AL, AM, AT, AU, AZ, BA, BB, BG, BR, BW, BY, BZ, CA, CH, CN, CO, CR, CU, CZ, DE, DK, DM, DZ, EC, EE, EG, ES, FI, GB, GD, GE, GH, GM, HR, HU, ID, IL, IN, IS, JP, KE, KG, KP, KR, KZ, LC, LK, LR, LS, LT, LU, LV, MA, MD, MG, MK, MN, MW, MX, MZ, NA, NI, NO, NZ, OM, PG, PH, PL, PT, RO, RU, SC, SD, SE, SG, SK, SL, SY, TJ, TM, TN, TR, TT, TZ, UA, UG, US, UZ, VC, VN, YU, ZA, ZM, ZW			
RW:	BW, GH, GM, KE, LS, MW, MZ, NA, SD, SL, SZ, TZ, UG, ZM, ZW, AM, AZ, BY, KG, KZ, MD, RU, TJ, TM, AT, BE, BG, CH, CY, CZ, DE, DK, EE, ES, FI, FR, GB, GR, HU, IE, IT, LU, MC, NL, PL, PT, RO, SE, SI, SK, TR, BF, BJ, CF, CG, CI, CM, GA, GN, GQ, GW, ML, MR, NE, SN, TD, TG			
AU 2004262586	A1	20050217	AU 2004-262586	2004 0709
CA 2531318	AA	20050217	CA 2004-2531318	2004 0709
EP 1648908	A1	20060426	EP 2004-741983	2004 0709
R:	AT, BE, CH, DE, DK, ES, FR, GB, GR, IT, LI, LU, NL, SE,			

MC, PT, IE, SI, FI, RO, CY, TR, BG, CZ, EE, HU, PL, SK
PRIORITY APPLN. INFO.: EP 2003-405551 A 2003
0718
WO 2004-EP51427 W 2004
0709

OTHER SOURCE(S): CASREACT 142:219415; MARPAT 142:219415

AB The present invention relates to a new, selective process for the preparation of mono- and bisacylphosphines, $(R_1)[\{(R_3)_2-m\}\{C(O)R_2\}_mP]_n$ (n, m = independent from each other 1, 2; R_1 , if $n = 1$, is e.g. Ph, R_1 , if $n = 2$, is e.g. C1-C18alkylene or phenylene; R_2 is e.g. C1-C18alkyl, Ph or substituted phenyl; R_3 is e.g. C1-C18 alkyl), by (1) reacting a phosphorous halide, phosphorous halide oxide, or phosphorous halide sulfide with an alkali metal in a solvent in the presence of a proton source; (2) subsequent reaction with acid halides; an oxidation step may follow to obtain mono- and bisacylphosphine oxides or mono- and bisacylphosphine sulfides. Thus, metalation of $PhPCl_2$ with Na in PhMe followed by protonation/reduction with t -BuOH, acylation with 2,4,6-trimethylbenzoyl chloride, and oxidation with H_2O_2 gave 75.7% bis(2,4,6-trimethylbenzoyl)phenylphosphine oxide.

IT 706783-57-5P

(process for preparation of acylphosphines and derivs. starting with halophosphine metalation, protonation/reduction, acylation, and oxidation)

RN 706783-57-5 HCAPLUS

CN Sodium, tris[1,2-di(methoxy- κ O)ethane]-, (OC-6-11)-, compd. with tris[1,2-di(methoxy- κ O)ethane]tris[μ 4-(1,2-diphenyl-1,2-diphosphoranediyldyne- κ P: κ P', κ P': κ P,.kappaappa.P': κ P')]pentasodium (1:1) (9CI) (CA INDEX NAME)

*** SUBSTANCE INFORMATION NOT AVAILABLE ***

IC ICM C07F009-50

CC 29-7 (Organometallic and Organometalloidal Compounds)

IT 3376-52-1P 706783-57-5P

(process for preparation of acylphosphines and derivs. starting with halophosphine metalation, protonation/reduction, acylation, and oxidation)

REFERENCE COUNT: 4 THERE ARE 4 CITED REFERENCES AVAILABLE FOR THIS RECORD. ALL CITATIONS AVAILABLE IN THE RE FORMAT

L46 ANSWER 2 OF 5 HCAPLUS COPYRIGHT 2006 ACS on STN

ACCESSION NUMBER: 2004:704366 HCAPLUS

DOCUMENT NUMBER: 141:350220

TITLE: Phosphorus radicals: "Naked" phosphanediide chains and their fragmentation into diphosphene radical anions

AUTHOR(S): Geier, Jens; Harmer, Jeffrey; Grutzmacher, Hansjorg

CORPORATE SOURCE: Department of Chemistry, HCl, ETH Honggerberg, Zurich, 8093, Switz.

SOURCE: Angewandte Chemie, International Edition (2004), 43(31), 4093-4097

CODEN: ACIEF5; ISSN: 1433-7851

PUBLISHER: Wiley-VCH Verlag GmbH & Co. KGaA

DOCUMENT TYPE: Journal

LANGUAGE: English

OTHER SOURCE(S): CASREACT 141:350220

AB Linear tetraphosphine α,ω -dianions gave stable salts with cryptand-stabilized alkali metal cations; in solns. the dianions undergo fragmentation into diphosphene radical-anions. Removal of alkali metal cations from [LL1M2(P4R4- κ P1, κ P4)] [1a-tmeda, M = Na, LL1 = Me2N(CH2)2NMe2; 1b-thf, M = K, LL1 = (THF)x] by complexation with [2.2.2]cryptand afforded crystalline salts meso- and rac-[Na([2.2.2]cryptand)]2[P4Ph4] (3a) and meso-[K([2.2.2]cryptand)]2[P4Cy4] (3b). Crystal structures of meso- and rac-3a, 3b and [(THF)4(tetramethylurea)Na2(μ -P4Ph4- κ P1, κ P4)] [1a-(thf)4(tmu)] are reported. In THF solution, 3a,b dissociate into [R2P2] \bullet anion-radicals, which were identified by their ESR-spectra.

IT 609338-68-3

(preparation and structure of tetraphosphine- α,ω -diide dianions and their fragmentation into diphosphene radical-ions)

RN 609338-68-3 HCAPLUS

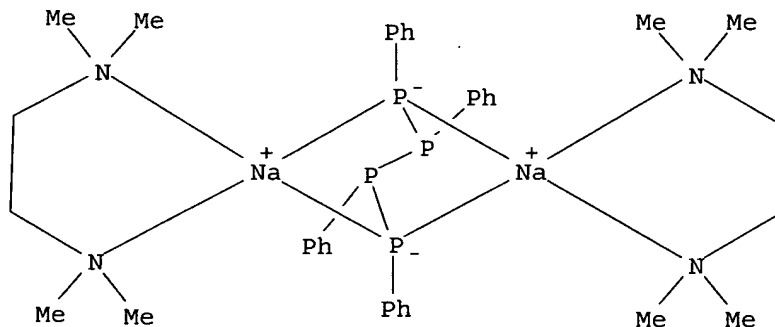
CN Sodium, bis(N,N,N',N'-tetramethyl-1,2-ethanediamine- κ N, κ N') [μ -[rel-(2R,3R)-1,2,3,4-tetraphenyltetraphosphinato(2-)- κ P1, κ P4: κ P1, κ P4]]di- (9CI) (CA INDEX NAME)

CM 1

CRN 609338-68-3

CMF C36 H52 N4 Na2 P4

CCI CCS



CM 2

CRN 706783-56-4

CMF C48 H60 Na5 O6 P6

CCI CCS

COC1COCCOC1

USHA SHRESTHA EIC 1600 REM 1A64

609338-68-3

(preparation and structure of tetraphosphine- α,ω -diide dianions and their fragmentation into diphosphene radical-ions)

REFERENCE COUNT: 51 THERE ARE 51 CITED REFERENCES AVAILABLE FOR THIS RECORD. ALL CITATIONS AVAILABLE IN THE RE FORMAT

L46 ANSWER 3 OF 5 HCAPLUS COPYRIGHT 2006 ACS on STN

ACCESSION NUMBER: 2004:493714 HCAPLUS

DOCUMENT NUMBER: 141:63881

TITLE: Process for the synthesis of
cycloorganophosphines and di(alkali
metal/alkaline earth metal)
oligophosphinediides

INVENTOR(S): Gruetzmacher, Hansjoerg; Geier, Jens;
Schoenberg, Hartmut; Scherer, Markus; Stein,
Daniel; Boulmaaz, Souad

PATENT ASSIGNEE(S): Ciba Specialty Chemicals Holding Inc., Switz.

SOURCE: PCT Int. Appl., 21 pp.

CODEN: PIXXD2

DOCUMENT TYPE: Patent

LANGUAGE: English

FAMILY ACC. NUM. COUNT: 1

PATENT INFORMATION:

PATENT NO.	KIND	DATE	APPLICATION NO.	DATE
WO 2004050668	A1	20040617	WO 2003-EP50873	2003 1124
W: AE, AG, AL, AM, AT, AU, AZ, BA, BB, BG, BR, BW, BY, BZ, CA, CH, CN, CO, CR, CU, CZ, DE, DK, DM, DZ, EC, EE, EG, ES, FI, GB, GD, GE, GH, GM, HR, HU, ID, IL, IN, IS, JP, KE, KG, KP, KR, KZ, LC, LK, LR, LS, LT, LU, LV, MA, MD, MG, MK, MN, MW, MX, MZ, NI, NO, NZ, OM, PG, PH, PL, PT, RO, RU, SC, SD, SE, SG, SK, SL, SY, TJ, TM, TN, TR, TT, TZ, UA, UG, US, UZ, VC, VN, YU, ZA, ZM, ZW RW: BW, GH, GM, KE, LS, MW, MZ, SD, SL, SZ, TZ, UG, ZM, ZW, AM, AZ, BY, KG, KZ, MD, RU, TJ, TM, AT, BE, BG, CH, CY, CZ, DE, DK, EE, ES, FI, FR, GB, GR, HU, IE, IT, LU, MC, NL, PT, RO, SE, SI, SK, TR, BF, BJ, CF, CG, CI, CM, GA, GN, GQ, GW, ML, MR, NE, SN, TD, TG				
AU 2003298311	A1	20040623	AU 2003-298311	2003 1124
EP 1567534	A1	20050831	EP 2003-796043	2003 1124
R: AT, BE, CH, DE, DK, ES, FR, GB, GR, IT, LI, LU, NL, SE, MC, PT, IE, SI, LT, LV, FI, RO, MK, CY, AL, TR, BG, CZ, EE, HU, SK				
JP 2006509007	T2	20060316	JP 2004-556322	2003 1124
US 2005283027	A1	20051222	US 2005-535372	2005 0519
PRIORITY APPLN. INFO.:			EP 2002-406055	A 2002

1204

WO 2003-EP50873

.W

2003

1124

OTHER SOURCE(S): CASREACT 141:63881; MARPAT 141:63881

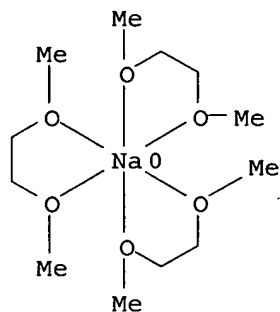
AB The invention relates to a process for the preparation of **cycloorganophosphines**, $(R_1P)_n$, by reaction of dihaloorganophosphines, $R_1P\text{Hal}_2$, with: (a) activated zinc in an organic solvent, or with: (b) an alkali metal or alkaline earth metal in a non-polar organic solvent in the presence of an activator, wherein $R_1 = \text{C1-12 alkyl; C3-12 cycloalkyl, aryl, heteroaryl, Hal} = \text{F, Cl, Br, I, and } n = 3-20$. The invention relates also to novel di(alkali metal/alkaline earth metal) oligophosphinediides and to the use thereof in the preparation of organophosphorus compds.

IT 609338-69-4P 706783-57-5P

(crystal structure; process for synthesis of **cycloorganophosphines** and di(alkali metal/alkaline earth metal) oligophosphinediides via dehalogenation of dihaloorganophosphine)

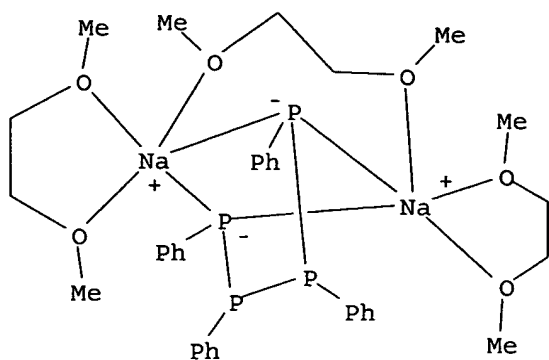
RN 609338-69-4 HCAPLUS

CN Sodium, $[\mu - [1,2\text{-di(methoxy-}\kappa\text{O)ethane}]]\text{bis}[1,2\text{-di(methoxy-}\kappa\text{O)ethane}][\mu - [1,2,3,4\text{-tetraphenyltetraphosphinato(2-)} - \kappa\text{P1}, \kappa\text{P4}:\kappa\text{P1}, \kappa\text{P4}]]\text{di- (9CI) (CA INDEX NAME)}$



RN 706783-57-5 HCAPLUS

CN Sodium, tris[1,2-di(methoxy- κO)ethane]-, (OC-6-11)-, compd. with tris[1,2-di(methoxy- κO)ethane]tris[μ_4 -(1,2-diphenyl-1,2-diphosphorane)diylidene- $\kappa\text{P}:\kappa\text{P}, \kappa\text{P}':\kappa\text{P}, \kappa\text{P}':\kappa\text{P}']$]pentasodium (1:1) (9CI) (CA INDEX NAME)



IT 644-97-3, Dichlorophenylphosphine
 (process for synthesis of **cycloorganophosphines** and
 di(alkali metal/alkaline earth metal) oligophosphinediides via
 dehalogenation of dihaloorganophosphine)

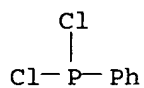
RN 644-97-3 HCAPLUS

CN Phosphonous dichloride, phenyl- (6CI, 8CI, 9CI) (CA INDEX NAME)

CM 1

CRN 644-97-3

CMF C6 H5 Cl2 P



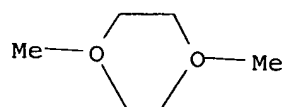
CM 2

CRN 706783-56-4

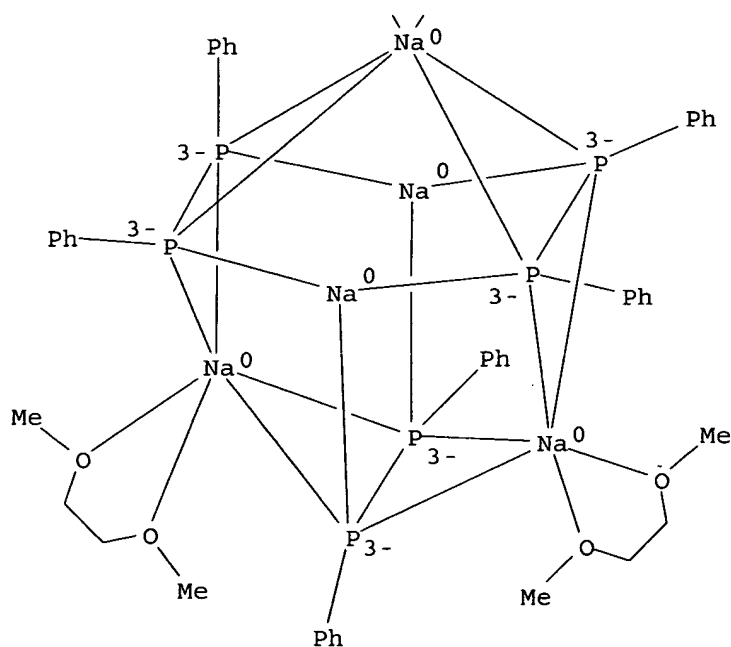
CMF C48 H60 Na5 O6 P6

CCI CCS

PAGE 1-A



PAGE 2-A



IT 2176-06-9DP, sodium complex with N,N,N',N'-tetramethylurea
7440-23-5DP, Sodium, diphenyldiphosphanediide
N,N,N',N'-tetramethylurea complex 609338-68-3P

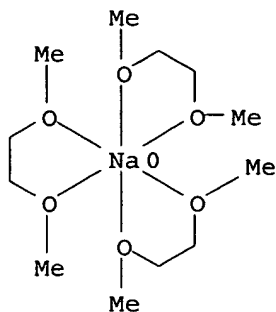
USHA SHRESTHA EIC 1600 REM 1A64

706783-55-3P

(process for synthesis of **cycloorganophosphines** and
 di(alkali metal/alkaline earth metal) oligophosphinediides via
 dehalogenation of dihaloorganophosphine)

RN 2176-06-9 HCAPLUS

CN Diphosphene, diphenyl- (9CI) (CA INDEX NAME)



RN 7440-23-5 HCAPLUS

CN Sodium (8CI, 9CI) (CA INDEX NAME)

Ph-P≡P-Ph

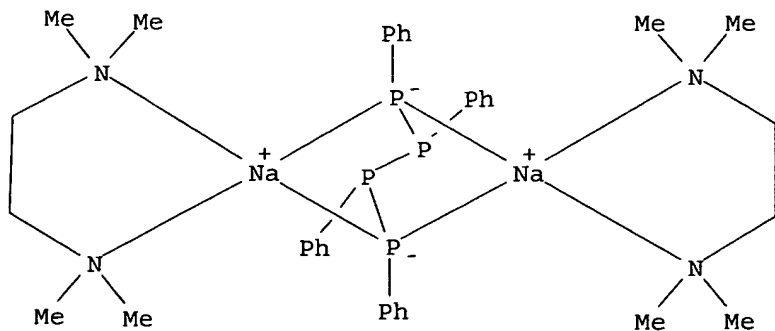
RN 609338-68-3 HCAPLUS

CN Sodium, bis(N,N,N',N'-tetramethyl-1,2-ethanediamine-
 $\kappa N, \kappa N'$) [μ -[rel-(2R,3R)-1,2,3,4-
 tetraphenyltetraphosphinato(2-)- $\kappa P1, \kappa P4 : \kappa P1, .\kappa a p$
 pa.P4]]di- (9CI) (CA INDEX NAME)

Na

RN 706783-55-3 HCAPLUS

CN Sodium, tris [$\mu 4$ -(1,2-diphenyl-1,2-diphosphorane)diylidene-
 $\kappa P : \kappa P, \kappa P' : \kappa P, \kappa P' : \kappa P'$)] tris(N,N,
 ,N',N'-tetramethyl-1,2-ethanediamine- $\kappa N, \kappa N'$) penta-,
 compd. with (OC-6-11)-tris(N,N,N',N'-tetramethyl-1,2-ethanediamine-
 $\kappa N, \kappa N'$) sodium (1:1) (9CI) (CA INDEX NAME)



IT 609338-67-2P

(process for synthesis of **cycloorganophosphines** and di(alkali metal/alkaline earth metal) oligophosphinediides via dehalogenation of dihaloorganophosphine)

RN 609338-67-2 HCAPLUS

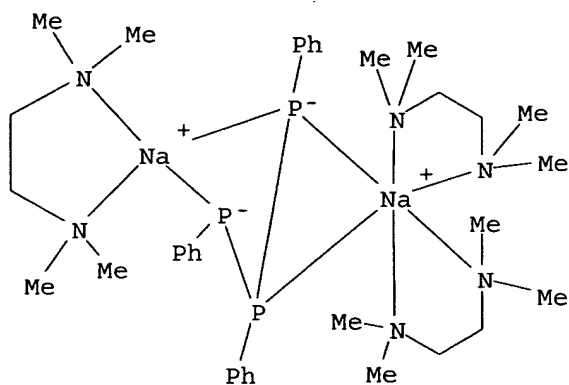
CN Sodium, tris(N,N,N',N'-tetramethyl-1,2-ethanediamine- κ N, κ N') [μ -[1,2,3-triphenyltriposphinato(2-)- κ P1, κ P2: κ P1, κ P3]]di- (9CI) (CA INDEX NAME)

CM 1

CRN 609338-67-2

CMF C36 H63 N6 Na2 P3

CCI CCS

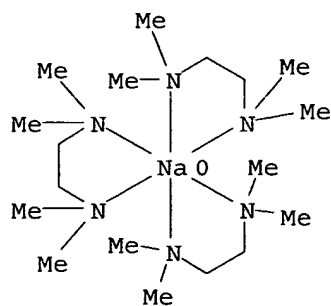


CM 2

CRN 706783-54-2

CMF C18 H48 N6 Na

CCI CCS



IC ICM C07F009-6564

CC 78-7 (Inorganic Chemicals and Reactions)

IT Alkaline earth metals

(process for synthesis of **cycloorganophosphines** and di(alkali metal/alkaline earth metal) oligophosphinediides via dehalogenation of dihaloorganophosphine)

IT 609338-69-4P 706783-57-5P
(crystal structure; process for synthesis of
cycloorganophosphines and di(alkali metal/alkaline earth
metal) oligophosphinediides via dehalogenation of
dihaloorganophosphine)

IT 109-87-5, Dimethoxymethane 110-18-9, N,N,N',N'-
Tetramethylethylenediamine
(process for synthesis of **cycloorganophosphines** and
di(alkali metal/alkaline earth metal) oligophosphinediides via
dehalogenation of dihaloorganophosphine)

IT 632-22-4 644-97-3, Dichlorophenylphosphine
(process for synthesis of **cycloorganophosphines** and
di(alkali metal/alkaline earth metal) oligophosphinediides via
dehalogenation of dihaloorganophosphine)

IT 2176-06-9DP, sodium complex with N,N,N',N'-tetramethylurea
7440-23-5DP, Sodium, diphenyldiphosphanediide
N,N,N',N'-tetramethylurea complex 609338-68-3P
706783-55-3P
(process for synthesis of **cycloorganophosphines** and
di(alkali metal/alkaline earth metal) oligophosphinediides via
dehalogenation of dihaloorganophosphine)

IT 3376-52-1P, Pentaphenylcyclopentaphosphine 51470-91-8P
609338-67-2P
(process for synthesis of **cycloorganophosphines** and
di(alkali metal/alkaline earth metal) oligophosphinediides via
dehalogenation of dihaloorganophosphine)

REFERENCE COUNT: 9 THERE ARE 9 CITED REFERENCES AVAILABLE
FOR THIS RECORD. ALL CITATIONS AVAILABLE
IN THE RE FORMAT

L46 ANSWER 4 OF 5 HCAPLUS COPYRIGHT 2006 ACS on STN

ACCESSION NUMBER: 2003:711502 HCAPLUS

DOCUMENT NUMBER: 139:300743

TITLE: Sodium oligophosphanediide ions in the
PhPCl₂/Na system: syntheses and structural
characterization

AUTHOR(S): Geier, Jens; Ruegger, Heinz; Woerle, Michael;
Gruetzmacher, Hansjoerg

CORPORATE SOURCE: Department of Chemistry, HCl, ETH
Hoenggerberg, Zurich, 8093, Switz.

SOURCE: Angewandte Chemie, International Edition
(2003), 42(33), 3951-3954
CODEN: ACIEF5; ISSN: 1433-7851

PUBLISHER: Wiley-VCH Verlag GmbH & Co. KGaA

DOCUMENT TYPE: Journal

LANGUAGE: English

OTHER SOURCE(S): CASREACT 139:300743

AB Reaction of PhPCl₂ with three or more equivalent of molten Na in a
toluene mixture with tetramethylethylenediamine (TMEDA) yields
[Na₆(P₂Ph₂)₃(TMEDA)_n] (2a), [Na₂(P₃Ph₃)(TMEDA)₃] (3a) and
[Na₂(P₄Ph₄)(TMEDA)₂] (4a). [Na(DME)₃][Na₅(P₂Ph₂)₃(DME)₃] (2b) was
obtained from a saturated DME solution of 2a and recrystn. of 4a from DME
leads to a displacement of the TMEDA ligands by DME to give
crystals of [Na₂(P₄Ph₄)(DME)₃] (4b). The results of the x-ray
structure analyses of 2b, 3a, 4a, and 4b are reported.

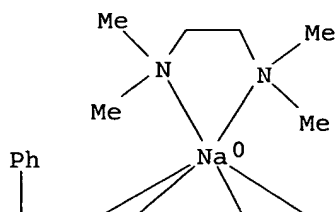
IT 609338-67-2P 609338-69-4P
(preparation and crystal structure)

RN 609338-67-2 HCAPLUS

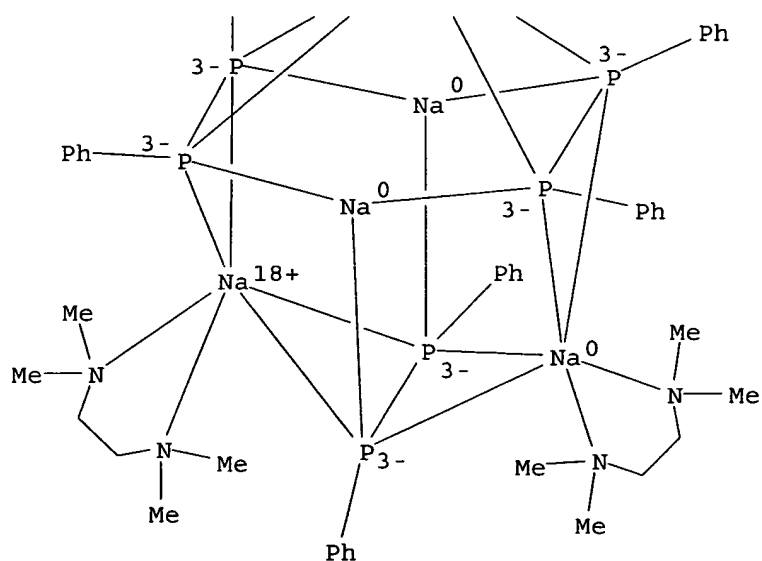
CN Sodium, tris(N,N,N',N'-tetramethyl-1,2-ethanediamine-
κN,κN') [μ-[1,2,3-triphenyltriphosphinato(2-)]-

$\kappa P1, \kappa P2: \kappa P1, \kappa P3]] di-$ (9CI) (CA INDEX
NAME)

PAGE 1-A



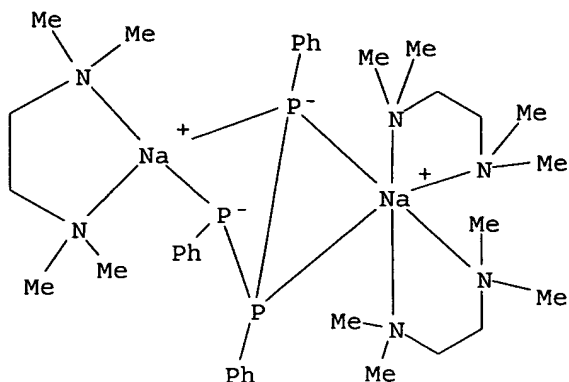
PAGE 2-A



RN 609338-69-4 HCAPLUS

CN Sodium, $[\mu-[1,2-di(methoxy-\kappa O)ethane]]bis[1,2-di(methoxy-\kappa O)ethane][\mu-[1,2,3,4-tetraphenyltetraphosphinato(2-)-$

$\kappa P1, \kappa P4 : \kappa P1, \kappa P4$]di- (9CI) (CA INDEX NAME)

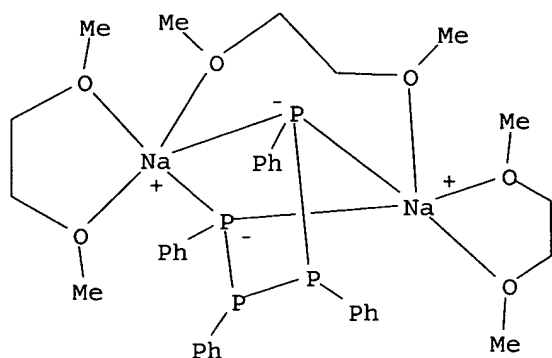


IT 609338-68-3P

(preparation, crystal structure and decomposition)

RN 609338-68-3 HCAPLUS

CN Sodium, bis(N,N,N',N'-tetramethyl-1,2-ethanediamine- $\kappa N, \kappa N'$) [μ -[rel-(2R,3R)-1,2,3,4-tetraphenyltetraphosphinato(2-)- $\kappa P1, \kappa P4 : \kappa P1, \kappa P4$]]di- (9CI) (CA INDEX NAME)



CC 78-7 (Inorganic Chemicals and Reactions)

Section cross-reference(s): 75

IT 609338-67-2P 609338-69-4P

(preparation and crystal structure)

IT 609338-68-3P

(preparation, crystal structure and decomposition)

REFERENCE COUNT: 34 THERE ARE 34 CITED REFERENCES AVAILABLE FOR THIS RECORD. ALL CITATIONS AVAILABLE IN THE RE FORMAT

L46 ANSWER 5 OF 5 HCAPLUS COPYRIGHT 2006 ACS on STN

ACCESSION NUMBER: 1995:276108 HCAPLUS

DOCUMENT NUMBER: 122:117333

TITLE: Novel electrosynthesis of poly(cyclo-organophosphazenes)

AUTHOR(S): Josowicz, Mira; Li, Jing; Exarhos, Gregory J.

CORPORATE SOURCE: Pacific Northwest Lab., Materials and Chem.
 Sci. Cent., Richland, WA, 99352, USA
 SOURCE: Journal of the Electrochemical Society (1994),
 141(12), L162-L164
 CODEN: JESOAN; ISSN: 0013-4651
 PUBLISHER: Electrochemical Society
 DOCUMENT TYPE: Journal
 LANGUAGE: English
 AB A new polymerization process for the synthesis of cyclomatrix polymers
 directly from the hexachlorocyclophosphazene trimer, (NPCl₂)₃, at
 an electrode surface is described. This electrochem. process is
 governed by the reductive coupling of an electrochem. generated
 reactive species from p-benzoquinone to the (NPCl₂)₃ through a
 nucleophilic replacement of chlorine. Based on the results of
 elemental anal., IR spectroscopy, and Auger electron spectroscopy,
 the mol. structure of the synthesized polymer was inferred. The
 unique polymerization route makes this process viable for in situ
 synthesis of materials having a wide range of important phys. and
 chemical properties.
 CC 72-2 (Electrochemistry)
 Section cross-reference(s): 28, 35
 IT Synthesis
 (electrochem., of poly(cycloorganophosphazenes))

=> d que 171

L37 STR

RRT 6
 X
 }
 PRO
 G1~P G1~P~X
 1 2 3 4 5

VAR G1=AK/CY
 NODE ATTRIBUTES:
 NSPEC IS R AT 2
 CONNECT IS E3 RC AT 4
 DEFAULT MLEVEL IS ATOM
 DEFAULT ECLEVEL IS LIMITED

GRAPH ATTRIBUTES:
 RING(S) ARE ISOLATED OR EMBEDDED
 NUMBER OF NODES IS 6

STEREO ATTRIBUTES: NONE
 L49 634 SEA FILE=CASREACT SSS FUL L37 (2689 REACTIONS)
 L53 SCR 1967
 L54 SCR 1936 OR 1956
 L60 STR

RRT 6	RGT	RGT	PRO	PRO	PRO
X	Zn @11	Na @12	Cb~P	Cb~P	Cb~P
{			1 2	7 8	9 10
Cb~P~X					
3 4 5					

G1 13

VAR G1=11/12

NODE ATTRIBUTES:

NSPEC IS R AT 2
 NSPEC IS R AT 8
 NSPEC IS R AT 10
 CONNECT IS E3 RC AT 4
 DEFAULT MLEVEL IS ATOM
 DEFAULT ECLEVEL IS LIMITED

GRAPH ATTRIBUTES:

RING(S) ARE ISOLATED OR EMBEDDED
 NUMBER OF NODES IS 13

STEREO ATTRIBUTES: NONE

L62 11 SEA FILE=CASREACT SUB=L49 SSS FUL L60 (23 REACTIONS
)
 L63 STR

RRT 6	PRO	PRO	PRO	RRT
X	G1~P	G1~P	G1~P	G2~CH2-CH2G2
{	1 2	7 8	9 10	11 12 13 14
G1~P~X				
3 4 5				

O~Me	Me~N~Me
@15 16	17 @18 19

VAR G1=AK/CY

VAR G2=15/18

NODE ATTRIBUTES:

NSPEC IS R AT 2
 NSPEC IS R AT 8
 NSPEC IS R AT 10
 CONNECT IS E3 RC AT 4
 DEFAULT MLEVEL IS ATOM
 DEFAULT ECLEVEL IS LIMITED

GRAPH ATTRIBUTES:

RING(S) ARE ISOLATED OR EMBEDDED
 NUMBER OF NODES IS 19

STEREO ATTRIBUTES: NONE

L65 4 SEA FILE=CASREACT SUB=L49 SSS FUL L63 (12 REACTIONS
)
 L66 13 SEA FILE=CASREACT ABB=ON L62 OR L65

```

L67          STR
RRT  6        PRO          PRO          PRO
      X        Cb~P        Cb~P        Cb~P
      {        1  2        7  8        9 10
Cb~P~X
3  4  5

```

NODE ATTRIBUTES:

```

NSPEC  IS R      AT  2
NSPEC  IS R      AT  8
NSPEC  IS R      AT 10
CONNECT IS E3   RC AT  4
DEFAULT MLEVEL IS ATOM
DEFAULT ECLEVEL IS LIMITED

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GRAPH ATTRIBUTES:

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RING(S) ARE ISOLATED OR EMBEDDED
NUMBER OF NODES IS 10

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STEREO ATTRIBUTES: NONE

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L69          33 SEA FILE=CASREACT SUB=L49 SSS FUL L67 AND (L53 OR L54)
              ( 70 REACTIONS)
L70          24 SEA FILE=CASREACT ABB=ON L69 AND (1940-2002)/PRY,AY,PY
L71          27 SEA FILE=CASREACT ABB=ON L66 OR L70

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=> fil casreact

FILE 'CASREACT' ENTERED AT 11:06:28 ON 23 AUG 2006

=> d l71 1-27 ibib abs fh1t

L71 ANSWER 1 OF 27 CASREACT COPYRIGHT 2006 ACS on STN

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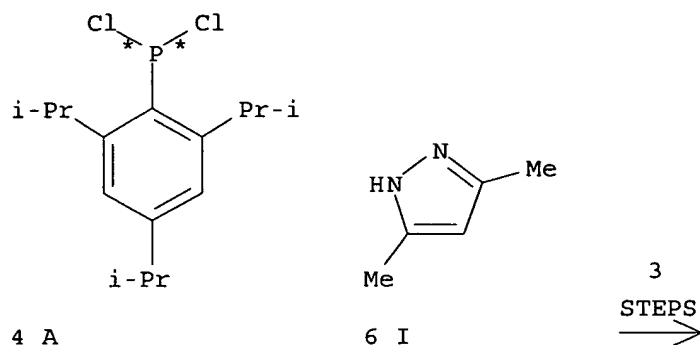
ACCESSION NUMBER: 144:488728 CASREACT
TITLE:           Assembly of Lipophilic Tetranuclear (Cu4 and
                  Zn4) Molecular Metallophosphonates from
                  2,4,6-Triisopropylphenylphosphonic Acid and
                  Pyrazole Ligands
AUTHOR(S):       Chandrasekhar, Vadapalli; Sasikumar, Palani;
                  Boomishankar, Ramamoorthy; Anantharaman,
                  Ganapathi
CORPORATE SOURCE: Department of Chemistry, Indian Institute of
                  Technology, Kanpur, 208016, India
SOURCE:          Inorganic Chemistry (2006), 45(8), 3344-3351
                  CODEN: INOCAJ; ISSN: 0020-1669
PUBLISHER:       American Chemical Society
DOCUMENT TYPE:   Journal
LANGUAGE:        English

```

AB A sterically hindered aryl phosphonic acid ArP(O)(OH)₂ (2) (Ar = 2,4,6-isopropylphenyl) was synthesized and structurally characterized. ArP(O)(OH)₂ forms an interesting hydrogen-bonded corrugated sheet-type supramol. structure in the solid-state. A three-component reaction involving ArP(O)(OH)₂, 3,5-dimethylpyrazole (DMPZH), and Cu(CH₃COO)₂·H₂O produces the tetranuclear Cu(II) compound [Cu₄(μ₃-OH)₂{ArPO₂(OH)}₂(CH₃CO₂)₂(DMPZH)₄][CH₃COO]₂·CH₂Cl₂ (3). A

similar three-component reaction involving ArP(O)(OH)_2 , 3,5-dimethylpyrazole, and $\text{Zn}(\text{CH}_3\text{COO})_2 \cdot 2\text{H}_2\text{O}$ yields the tetranuclear Zn(II) compound $[\text{Zn}_4\{\text{ArPO}_3\}_2\{\text{ArPO}_2(\text{OH})\}_2\{\text{DMPZH}\}_4(\text{DMPZ})_2] \cdot 5\text{MeOH}$ (4). While 3 has been found to have an asym. cage structure where two dinuclear copper cores are bridged by bidentate $[\text{ArPO}_2(\text{OH})]$ - ligands, 4 possesses an open-book tricyclic structure composed of three fused metallophosphonate rings. Magnetic studies on 3 revealed antiferromagnetic behavior.

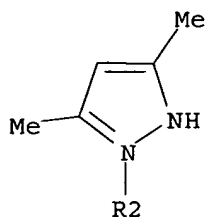
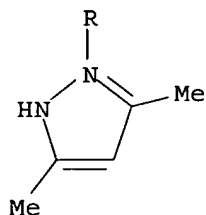
RX(12) OF 15 COMPOSED OF RX(1), RX(2), RX(4)
 RX(12) 4 A + 6 I ==> M



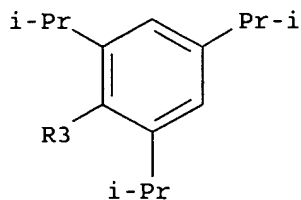
* STRUCTURE DIAGRAM TOO LARGE FOR DISPLAY - AVAILABLE VIA OFFLINE PRINT
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* STRUCTURE DIAGRAM TOO LARGE FOR DISPLAY - AVAILABLE VIA OFFLINE PRINT
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PAGE 2-A



PAGE 3-A



M
YIELD 98%

RX(1) RCT A 53356-73-3
RGT C 7791-25-5 SO₂Cl₂
PRO B 114070-56-3
SOL 56-23-5 CCl₄
CON 1 hour, 0 deg C -> room temperature

RX(2) RCT B 114070-56-3
RGT F 1310-73-2 NaOH
PRO E 289706-74-7
SOL 7732-18-5 Water, 67-64-1 Me₂CO
CON 48 hours, room temperature

RX(4) RCT I 67-51-6

STAGE(1)
RGT N 557-34-6 Zn(OAc)₂
SOL 67-56-1 MeOH
CON 5 minutes, room temperature

STAGE(2)
RCT E 289706-74-7
CON 2 hours, room temperature

PRO M 887127-56-2

REFERENCE COUNT: 41 THERE ARE 41 CITED REFERENCES AVAILABLE
FOR THIS RECORD. ALL CITATIONS AVAILABLE
IN THE RE FORMAT

L71 ANSWER 2 OF 27 CASREACT COPYRIGHT 2006 ACS on STN

ACCESSION NUMBER: 142:272704 CASREACT

TITLE: Syntheses and molecular structures of novel
alkali metal tetraorganyl-
cyclopentaphosphanides and
tetraorganyltetraphosphane-1,4-diides

AUTHOR(S): Wolf, Robert; Schisler, Andrea; Loennecke,
Peter; Jones, Cameron; Hey-Hawkins, Evamarie

CORPORATE SOURCE: Institut fuer Anorganische Chemie der
Universitaet Leipzig, Leipzig, 04103, Germany

SOURCE: European Journal of Inorganic Chemistry
(2004), (16), 3277-3286

CODEN: EJICFO; ISSN: 1434-1948

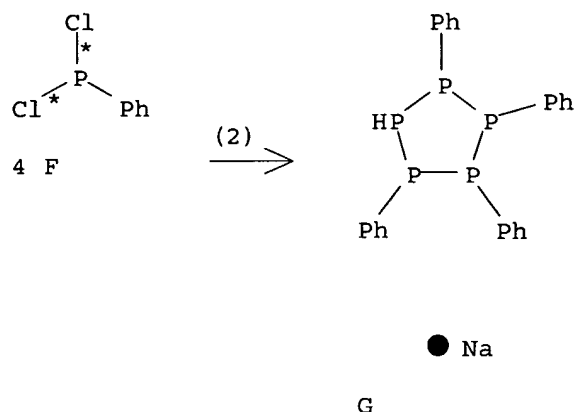
PUBLISHER: Wiley-VCH Verlag GmbH & Co. KGaA

DOCUMENT TYPE: Journal

LANGUAGE: English

AB The reaction of sodium with RPCl_2 and PCl_3 (12:4:1) in THF gave $\text{Na}[\text{cyclo}-(\text{P}_5\text{R}_4)]$ [$\text{R} = \text{iPr}$ (1), Ph (2)], while four equivalent of RPCl_2 [$\text{R} = \text{Ph}$, 2,4,6-Me $_3$ C $_6$ H $_2$ (Mes), tBu] reacted with ten equivalent of sodium sand or elemental potassium in refluxing THF to yield the compds. $[\text{Na}_2(\text{THF})_5(\text{P}_4\text{Ph}_4)]$ (3), $[\text{Na}_2(\text{THF})_4(\text{P}_4\text{Mes}_4)]$ (4), and $[\text{Na}_2(\text{THF})_4(\text{P}_4\text{tBu}_4)]$ (5), or the potassium salt $[\text{K}_2(\text{THF})_6(\text{P}_4\text{Mes}_4)]$ (6). Recrystg. 6 from 1,4-dioxane/pentane (1:3) also led to $[\{\text{K}(\text{L})_2\}_2\{\text{K}(\text{L})\}_6(\text{P}_4\text{Mes}_4)_4 \cdot 0.5\text{THF}]_\infty$ ($\text{L} = 1,4\text{-dioxane}$) (7). In the solid state compds. 3 - 6 exist as isolated ion-contact complexes, in which the P_4 chain of the $(\text{P}_4\text{R}_4)_2$ -ligand has a syn arrangement, while a polymeric helical arrangement was observed for 7. A minor product, $[\{\text{K}(\text{pmdeta})(\text{HP}_3\text{Mes}_3)\}_2\{\text{K}_2(\text{P}_4\text{Mes}_4)\}] \cdot 0.25 \text{ hexane}$ (8), was isolated from the reaction of MesPCl_2 and K (1:2.5). Compound 8 contains the first structurally characterized example of a triphosphanide anion, $(\text{HP}_3\text{Mes}_3)^-$, besides $\text{K}_2(\text{P}_4\text{Mes}_4)$. The mol. structures of 3-8 were determined by X-ray crystallog.

RX(2) OF 8 4 F ==> G



RX(2) RCT F 644-97-3
 RGT C 7719-12-2 PCl_3 , D 7440-23-5 Na
 PRO G 846040-39-9
 SOL 109-99-9 THF
 CON 5 days, reflux

REFERENCE COUNT: 57 THERE ARE 57 CITED REFERENCES AVAILABLE
 FOR THIS RECORD. ALL CITATIONS AVAILABLE
 IN THE RE FORMAT

L71 ANSWER 3 OF 27 CASREACT COPYRIGHT 2006 ACS on STN

ACCESSION NUMBER: 141:63881 CASREACT

TITLE: Process for the synthesis of
 cycloorganophosphines and di(alkali
 metal/alkaline earth metal)
 oligophosphinediides

INVENTOR(S): Gruetzmacher, Hansjoerg; Geier, Jens;
 Schoenberg, Hartmut; Scherer, Markus; Stein,
 Daniel; Boulmaaz, Souad

PATENT ASSIGNEE(S): Ciba Specialty Chemicals Holding Inc., Switz.

SOURCE: PCT Int. Appl., 21 pp.

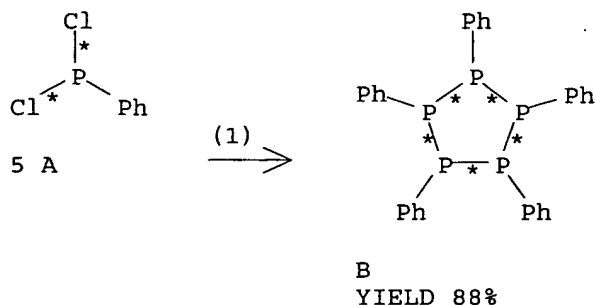
CODEN: PIXXD2
 DOCUMENT TYPE: Patent
 LANGUAGE: English
 FAMILY ACC. NUM. COUNT: 1
 PATENT INFORMATION:

PATENT NO.	KIND	DATE	APPLICATION NO.	DATE
WO 2004050668	A1	20040617	WO 2003-EP50873	20031124
W:				
			AE, AG, AL, AM, AT, AU, AZ, BA, BB, BG, BR, BW, BY, BZ, CA, CH, CN, CO, CR, CU, CZ, DE, DK, DM, DZ, EC, EE, EG, ES, FI, GB, GD, GE, GH, GM, HR, HU, ID, IL, IN, IS, JP, KE, KG, KP, KR, KZ, LC, LK, LR, LS, LT, LU, LV, MA, MD, MG, MK, MN, MW, MX, MZ, NI, NO, NZ, OM, PG, PH, PL, PT, RO, RU, SC, SD, SE, SG, SK, SL, SY, TJ, TM, TN, TR, TT, TZ, UA, UG, US, UZ, VC, VN, YU, ZA, ZM, ZW	
RW:			BW, GH, GM, KE, LS, MW, MZ, SD, SL, SZ, TZ, UG, ZM, ZW, AM, AZ, BY, KG, KZ, MD, RU, TJ, TM, AT, BE, BG, CH, CY, CZ, DE, DK, EE, ES, FI, FR, GB, GR, HU, IE, IT, LU, MC, NL, PT, RO, SE, SI, SK, TR, BF, BJ, CF, CG, CI, CM, GA, GN, GQ, GW, ML, MR, NE, SN, TD, TG	
AU 2003298311	A1	20040623	AU 2003-298311	20031124
EP 1567534	A1	20050831	EP 2003-796043	20031124
R:			AT, BE, CH, DE, DK, ES, FR, GB, GR, IT, LI, LU, NL, SE, MC, PT, IE, SI, LT, LV, FI, RO, MK, CY, AL, TR, BG, CZ, EE, HU, SK	
JP 2006509007	T2	20060316	JP 2004-556322	20031124
US 2005283027	A1	20051222	US 2005-535372	20050519
PRIORITY APPLN. INFO.:			EP 2002-406055	20021204
			WO 2003-EP50873	20031124

OTHER SOURCE(S): MARPAT 141:63881

AB The invention relates to a process for the preparation of cycloorganophosphines, (R₁P)_n, by reaction of dihaloorganophosphines, R₁PHal₂, with: (a) activated zinc in an organic solvent, or with: (b) an alkali metal or alkaline earth metal in a non-polar organic solvent in the presence of an activator, wherein R₁ = C₁-12 alkyl; C₃-12 cycloalkyl, aryl, heteroaryl, Hal = F, Cl, Br, I, and n = 3-20. The invention relates also to novel di(alkali metal/alkaline earth metal) oligophosphinediides and to the use thereof in the preparation of organophosphorus compds.

RX(1) OF 8 5 A ==> B



RX(1) RCT A 644-97-3
 RGT C 7440-66-6 Zn

PRO B 3376-52-1
 SOL 109-99-9 THF
 CON 30 minutes, >40 deg C
 NTE zinc was activated by heating at 200° for 2h in
 oxygen-free THF

REFERENCE COUNT: 9 THERE ARE 9 CITED REFERENCES AVAILABLE
 FOR THIS RECORD. ALL CITATIONS AVAILABLE
 IN THE RE FORMAT

L71 ANSWER 4 OF 27 CASREACT COPYRIGHT 2006 ACS on STN

ACCESSION NUMBER: 139:300743 CASREACT

TITLE: Sodium oligophosphanediide ions in the
 PhPCl₂/Na system: syntheses and structural
 characterization

AUTHOR(S): Geier, Jens; Ruegger, Heinz; Woerle, Michael;
 Gruetzmacher, Hansjoerg

CORPORATE SOURCE: Department of Chemistry, HCl, ETH
 Hoenggerberg, Zurich, 8093, Switz.

SOURCE: Angewandte Chemie, International Edition
 (2003), 42(33), 3951-3954

CODEN: ACIEF5; ISSN: 1433-7851

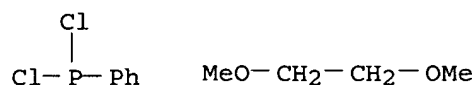
PUBLISHER: Wiley-VCH Verlag GmbH & Co. KGaA

DOCUMENT TYPE: Journal

LANGUAGE: English

AB Reaction of PhPCl₂ with three or more equivalent of molten Na in a
 toluene mixture with tetramethylethylenediamine (TMEDA) yields
 [Na₆(P₂Ph₂)₃(TMEDA)_n] (2a), [Na₂(P₃Ph₃)(TMEDA)₃] (3a) and
 [Na₂(P₄Ph₄)(TMEDA)₂] (4a). [Na(DME)₃][Na₅(P₂Ph₂)₃(DME)₃] (2b) was
 obtained from a saturated DME solution of 2a and recrystn. of 4a from DME
 leads to a displacement of the TMEDA ligands by DME to give
 crystals of [Na₂(P₄Ph₄)(DME)₃] (4b). The results of the x-ray
 structure analyses of 2b, 3a, 4a, and 4b are reported.

RX(1) OF 12 A + B ==> C...



A

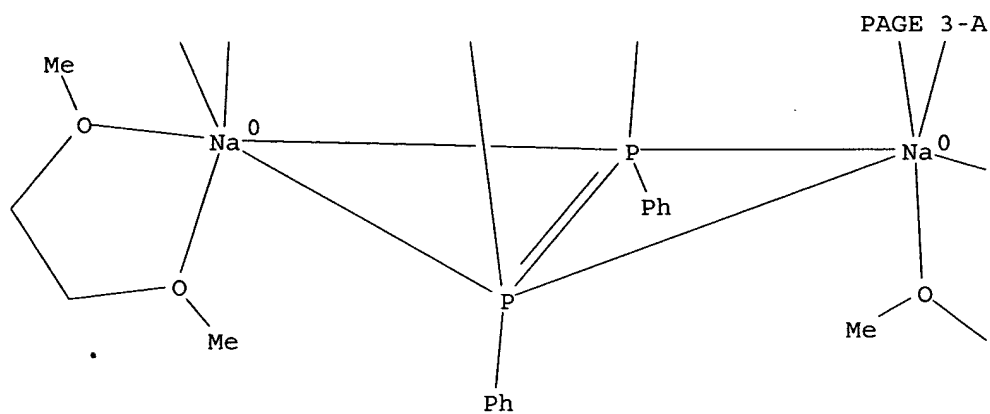
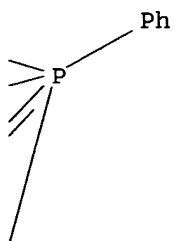
B



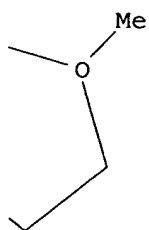
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* STRUCTURE DIAGRAM TOO LARGE FOR DISPLAY - AVAILABLE VIA OFFLINE PRINT
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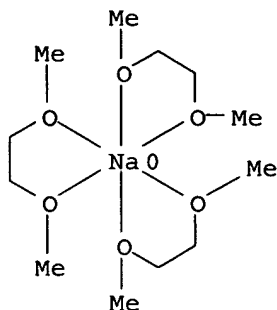
PAGE 2-B



PAGE 3-B



C: CM 1



C: CM 2

RX(1) RCT A 644-97-3, B 110-71-4

STAGE(1)

RGT D 110-18-9 TMEDA, E 7440-23-5 Na

SOL 108-88-3 PhMe

CON SUBSTAGE(1) reflux

SUBSTAGE(2) reflux -> 50 deg C

STAGE(2)

RGT F 34478-62-1D Diphosphine, 1,2-diphenyl-

CON 2 - 3 hours, reflux

STAGE(3)

SOL 7732-18-5 Water

CON 1 day, room temperature

PRO C 609770-98-1

REFERENCE COUNT: 34 THERE ARE 34 CITED REFERENCES AVAILABLE
FOR THIS RECORD. ALL CITATIONS AVAILABLE
IN THE RE FORMAT

L71 ANSWER 5 OF 27 CASREACT COPYRIGHT 2006 ACS on STN

ACCESSION NUMBER: 137:353109 CASREACT

TITLE: Syntheses and Structural Characterizations of
the Unsymmetrical Diphosphine DmpP:PMes* (Dmp
= 2,6-Mes₂C₆H₃, Mes* = 2,4,6-tBu₃C₆H₂) and the
Cyclotetraphosphine [DmpPPPh]₂

AUTHOR(S): Smith, Rhett C.; Urnezis, Eugenijus; Lam,
Kin-Chung; Rheingold, Arnold L.; Protasiewicz,
John D.

CORPORATE SOURCE: Department of Chemistry, Case Western Reserve
University, Cleveland, OH, 44106-7708, USA

SOURCE: Inorganic Chemistry (2002), 41(20),
5296-5299

CODEN: INOCAJ; ISSN: 0020-1669

PUBLISHER: American Chemical Society

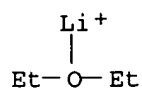
DOCUMENT TYPE: Journal

LANGUAGE: English

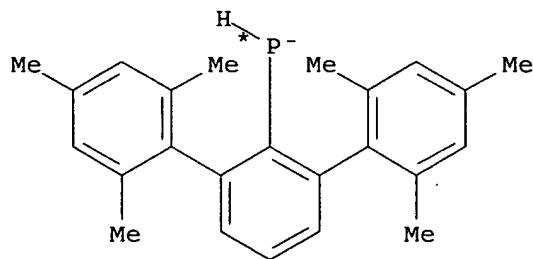
AB The new diphosphine DmpP:PMes* (Dmp = 2,6-Mes₂C₆H₃; Mes* =
2,4,6-tBu₃C₆H₂, 1) having two different classes of sterically
demanding aryls has been prepared and structurally characterized.

This structure appears to be the first featuring both types of sterically demanding groups (a meta-terphenyl and Mes*) in a single mol. about a multiply bonded unit. Compound 1 features a P:P bond length of 2.024(13) Å. The structure of 1 also allows comparisons to the two previously structurally characterized sym. diphosphenes DmpP:PDmp and Mes*P:PMes*. The crystal structure of the cyclotetraphosphine [DmpPPPPh]₂ (3), the product of self-dimerization of the unstable diphosphene DmpP:PPh (2), has been determined. The structure of 3 demonstrates that a single bulky Dmp group is insufficient to prevent dimerization of 2. ³¹P NMR data for all three compds. are also reported.

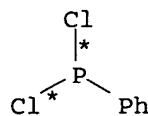
RX(2) OF 2 2 F + 2 G ==> H



2 F: CM 1

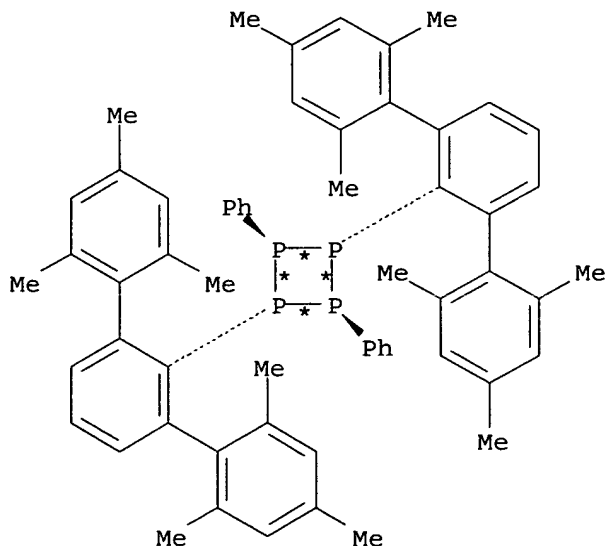


2 F: CM 2



2 G

(2) →



H
YIELD 82%

RX(2) RCT F 478622-13-8, G 644-97-3

STAGE(1)

SOL 60-29-7 Et2O

STAGE(2)

RGT D 6674-22-2 DBU

SOL 60-29-7 Et2O

PRO H 474434-77-0

REFERENCE COUNT: 25 THERE ARE 25 CITED REFERENCES AVAILABLE
FOR THIS RECORD. ALL CITATIONS AVAILABLE
IN THE RE FORMAT

L71 ANSWER 6 OF 27 CASREACT COPYRIGHT 2006 ACS on STN

ACCESSION NUMBER: 137:247748 CASREACT

TITLE: Synthesis, resolution, and reactivity of
benzylmesitylphenylphosphine: A new P-chiral
bulky ligand

AUTHOR(S): Albert, Joan; Bosque, Ramon; Cadena, J.
Magali; Delgado, Sergio; Granell, Jaume;
Muller, Guillermo; Ordinas, Juan I.; Bardia,
Merce Font; Solans, Xavier

CORPORATE SOURCE: Department de Quimica Inorganica Universitat
de Barcelona, Diagonal 647, Barcelona, 08028,
Spain

SOURCE: Chemistry--A European Journal (2002
, 8(10), 2279-2287

CODEN: CEUJED; ISSN: 0947-6539

PUBLISHER: Wiley-VCH Verlag GmbH

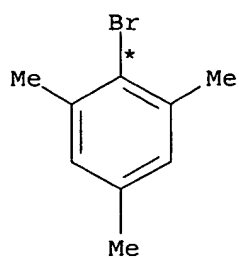
DOCUMENT TYPE: Journal

LANGUAGE: English

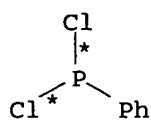
AB The synthesis of P,P'-dimesityl-P,P'-diphenyldiphosphine and
benzylmesitylphenylphosphine is described as well as the resolution
of the latter ligand by homochiral organometallic complexes. The
absolute configuration of the phosphine is assigned by NMR spectra,
using the homochiral palladacycle as a reference point. The
configuration was confirmed by single crystal x-ray diffraction.
Mol. mechanics calcns. were performed in [PdCl-(R)-(+)-
ClO₆CH(Me)NH₂(PBnMesPh)], and showed that the rotation around the
Pd-P bond is restricted in this complex. [Pd(η^3 -2-
MeC₃H₄)Cl(PBnMesPh)] was obtained and used as a precursor in the
catalytic hydrovinylation of styrene.
Benzylmesitylphenylphosphine has a strong tendency to form
phosphapalladacycles by activation of one of the ortho-Me groups.
The formation of this metallacycle from cyclopalladated N-donor
derivs. by a ligand-exchange reaction is also described.

RX(17) OF 18 COMPOSED OF RX(1), RX(2), RX(3), RX(5)

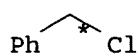
RX(17) 5 A + 5 B + 4 H + 4 K ==> Q +
R



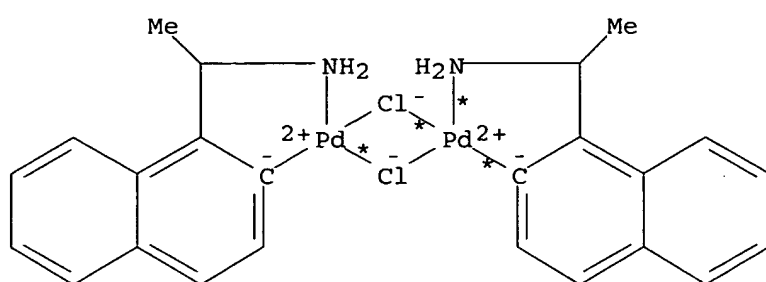
5 A



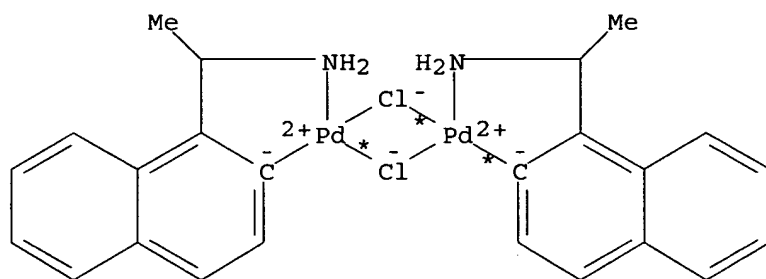
5 B



4 H

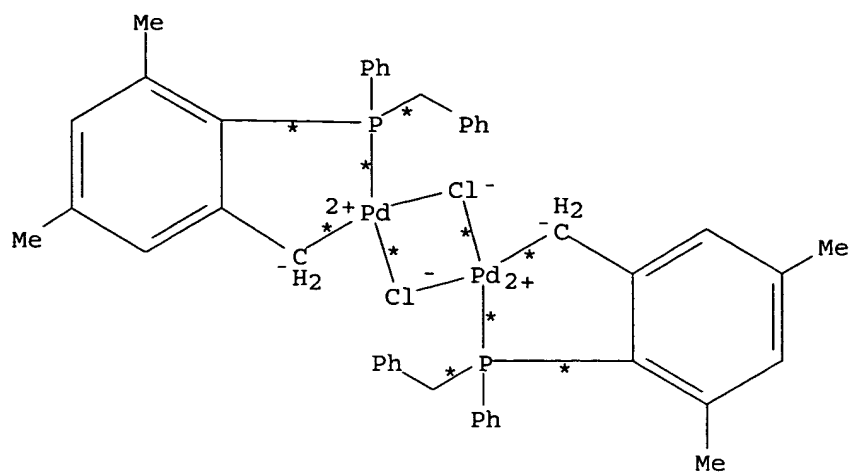


K

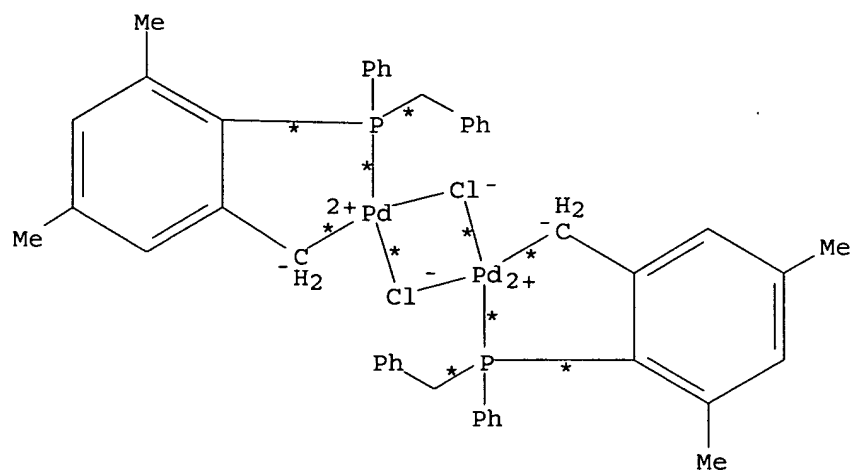


3 K

4
STEPS
→



Q
YIELD 60% (67)



R
YIELD 60% (33)

RX(1) RCT A 576-83-0

STAGE(1)

RGT D 7439-95-4 Mg

SOL 109-99-9 THF

STAGE(2)

RCT B 644-97-3

STAGE(3)

RGT E 12125-02-9 NH4Cl, F 7732-18-5 Water

PRO C 460729-60-6

RX(2) RCT C 460729-60-6

STAGE(1)

RGT J 7439-93-2 Li

SOL 109-99-9 THF

STAGE(2)

RCT H 100-44-7

STAGE(3)

RGT E 12125-02-9 NH4Cl, F 7732-18-5 Water

PRO I 460729-61-7

RX(3) RCT I 460729-61-7, K 190125-95-2

PRO L 460729-65-1, M 460991-12-2

SOL 109-99-9 THF

RX(5) RCT L 460729-65-1, M 460991-12-2

PRO Q 460729-71-9, R 460991-18-8

SOL 67-66-3 CHCl3

NTE silica gel

REFERENCE COUNT: 147 THERE ARE 147 CITED REFERENCES AVAILABLE
FOR THIS RECORD. ALL CITATIONS AVAILABLE
IN THE RE FORMAT

L71 ANSWER 7 OF 27 CASREACT COPYRIGHT 2006 ACS on STN

ACCESSION NUMBER: 137:33391 CASREACT

TITLE: A bridging ligand featuring terminal
2-pyridylphosphole moieties: synthesis,
optical properties and Ru(II)-complex
AUTHOR(S): Hay, Caroline; Sauthier, Mathieu; Deborde,
Valerie; Hissler, Muriel; Toupet, Loic; Reau,
Regis

CORPORATE SOURCE: Organometalliques et Catalyse: Chimie et
Electrochimie Moleculaires, UMR 6509
CNRS-Universite de Rennes 1, Institut de
Chimie de Rennes, Rennes, 35042, Fr.

SOURCE: Journal of Organometallic Chemistry (
2002), 643-644, 494-497
CODEN: JORCAI; ISSN: 0022-328X

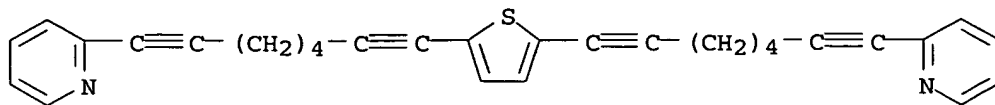
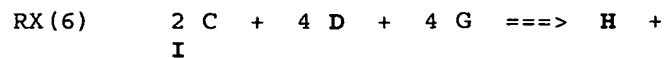
PUBLISHER: Elsevier Science S.A.

DOCUMENT TYPE: Journal

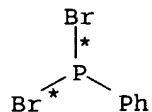
LANGUAGE: English

AB 2,2'-Di[2-(5-(2-pyridyl)phospholyl)]thiophene (2a) has been
obtained in 63% yield via Fagan-Nugent's route. Compound 2a
possesses an extended π -conjugated system and behaves as a
bis(P,N-chelate) towards cationic (p-cymene)RuCl fragments and
afforded the air-stable bis(hexafluorophosphate) complex (3a) in
60% yield. A diastereoselective coordination was observed and solid
state structure of the model (p-cymene)RuCl-L triflate complex
(3b), in which related 2-(2-pyridyl)-5-(2-thienyl)phosphole ligand
(2b) is included. Compound 2a-b as well as corresponding Ru
complexes 3a-b have photophys. data reported.

RX(6) OF 7 COMPOSED OF RX(2), RX(3)



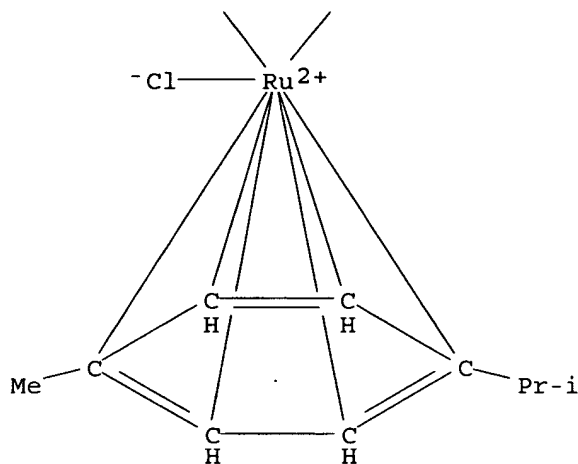
2 C



4 D

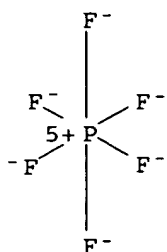
* STRUCTURE DIAGRAM TOO LARGE FOR DISPLAY - AVAILABLE VIA OFFLINE PRINT
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PAGE 2-A



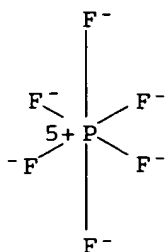
4 G

2
STEPS
→



STRUCTURE
DIAGRAM
IS NOT
AVAILABLE

H: CM 1



STRUCTURE
DIAGRAM
IS NOT
AVAILABLE

I: CM 1

I: CM 2

RX(2) RCT C 437768-59-7

STAGE(1)

RGT F 1291-32-3 ZrCp2Cl2

STAGE(2)

RCT D 1073-47-8

PRO E 437768-60-0

NTE no exptl. detail; Fagan-Nugent's route

RX(3) RCT E 437768-60-0, G 52462-29-0

RGT J 17084-13-8 KPF6

PRO H 437768-62-2, I 437768-66-6

SOL 75-09-2 CH2Cl2

NTE 60% overall

REFERENCE COUNT: 21 THERE ARE 21 CITED REFERENCES AVAILABLE
FOR THIS RECORD. ALL CITATIONS AVAILABLE
IN THE RE FORMAT

L71 ANSWER 8 OF 27 CASREACT COPYRIGHT 2006 ACS on STN

ACCESSION NUMBER: 135:92684 CASREACT

TITLE: Reaction of m-Terphenyldichlorophosphanes with
Sodium Azide: Synthesis and Characterization
of Stable Azidocyclophosphazenes

AUTHOR(S): Wehmschulte, Rudolf J.; Khan, Masood A.;
Hossain, Shawn I.

CORPORATE SOURCE: Department of Chemistry and Biochemistry,
University of Oklahoma, Norman, OK, 73019, USA

SOURCE: Inorganic Chemistry (2001), 40(12),
2756-2762

CODEN: INOCAJ; ISSN: 0020-1669

PUBLISHER: American Chemical Society

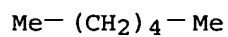
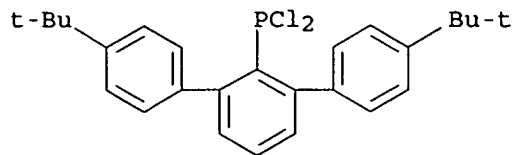
DOCUMENT TYPE: Journal

LANGUAGE: English

AB Reaction of the m-terphenyldichlorophosphanes 2,6-(2-MeC6H4)2C6H3PCl2 (1), 2,6-(4-t-BuC6H4)2C6H3PCl2 (2), or 2,6-Mes2C6H3PCl2 (3) with excess NaN3 in acetonitrile at room temperature afforded the corresponding bisazidophosphanes 2,6-(2-MeC6H4)2C6H3P(N3)2, 2,6-(4-t-BuC6H4)2C6H3P(N3)2 (5), or 2,6-Mes2C6H3P(N3)2 (6) (Mes = 2,4,6-Me3C6H2), resp. These compds. are thermally labile and decompose into a number of azidophosphazenes. The azidocyclophosphazenes [NP(N3)(C6H3(4-t-BuC6H4)2-2,6)]3 (4) and [NP(N3)C6H3Mes2-2,6]2 (8) were isolated from these mixts. All

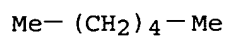
compds. were characterized by ^1H , ^{13}C , ^{31}P NMR and IR spectroscopy. Crystal structures of 2, 4, and 8 were determined

RX(3) OF 11 ...G + E ==> H



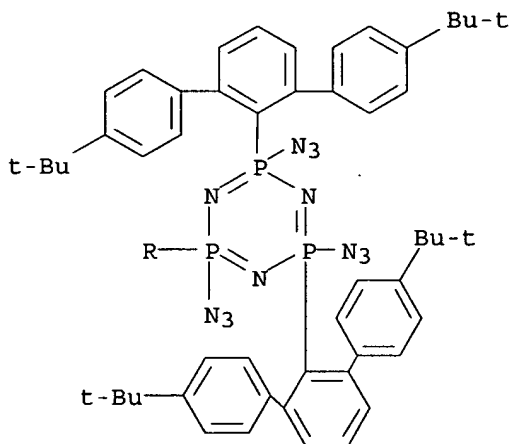
G

E

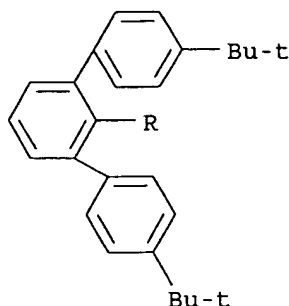


H: CM 1
YIELD 26%

PAGE 1-A



PAGE 2-A



H: CM 2
YIELD 26%

RX(3) RCT G 349551-22-0

STAGE(1)

RGT I 26628-22-8 NaN₃

SOL 75-05-8 MeCN

STAGE(2)

RCT E 110-54-3

SOL 110-54-3 Hexane

PRO H 349551-24-2

REFERENCE COUNT: 37 THERE ARE 37 CITED REFERENCES AVAILABLE
FOR THIS RECORD. ALL CITATIONS AVAILABLE
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L71 ANSWER 9 OF 27 CASREACT COPYRIGHT 2006 ACS on STN

ACCESSION NUMBER: 134:304626 CASREACT

TITLE: Rational Design and Assembly of M₂M'₃L₆
Supramolecular Clusters with C_{3h} Symmetry by
Exploiting Incommensurate Symmetry Numbers

AUTHOR(S): Sun, Xiankai; Johnson, Darren W.; Caulder,
Dana L.; Raymond, Kenneth N.; Wong, Edward H.

CORPORATE SOURCE: Departments of Chemistry, University of New
Hampshire, Durham, NH, 03824, USA

SOURCE: Journal of the American Chemical Society (
2001), 123(12), 2752-2763

CODEN: JACSAT; ISSN: 0002-7863

PUBLISHER: American Chemical Society

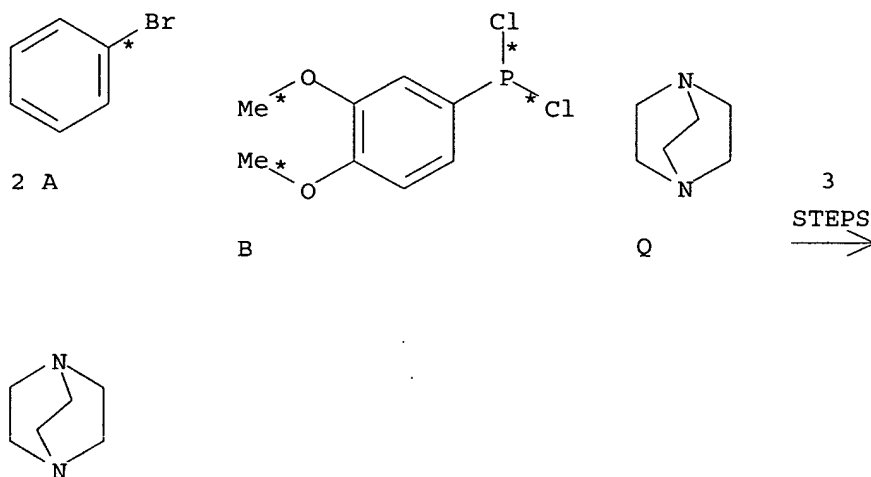
DOCUMENT TYPE: Journal

LANGUAGE: English

AB A rational approach to heterometallic cluster formation is
described that uses incommensurate symmetry requirements at two
different metals to control the stoichiometry of the assembly.
Critical to this strategy is the proper design and synthesis of
hybrid ligands with coordination sites selective toward each
metal. The phosphino-catechol ligand 4-(diphenylphosphino)benzene-
1,2-diol (H₂L) possesses both hard catecholate and soft phosphine
donor sites and serves such a role, using soft (C₂-sym.) and hard
(C₃-sym.) metal centers. The ML₃ catecholate complexes (M =

FeIII, GaIII, TiIV, SnIV) were prepared and characterized as C3-symmetry precursors for the stepwise assembly (aufbau) of heterometallic clusters. While the single-crystal x-ray structure of the Cs₂[TiL₃] salt shows a C1 mer-configuration in the solid -state, room-temperature solution NMR data of this and related complexes are consistent with either exclusive formation of the C3-fac-isomer with all PPh₂ donor sites syn to each other or facile fac/mer isomerization. Coordination of these [ML₃]²⁻ (M = TiIV, SnIV) metallaligands via their soft P donor sites to C₂-sym. PdBr₂ units gives exclusively pentametallic [M₂Pd₃Br₆L₆]⁴⁻ (M = Ti, Sn) clusters. These clusters were fully characterized by spectral and x-ray structural data as C_{3h} mesocates with Cs⁺ or protonated 1,4-diazabicyclo[2.2.2]octane (DABCO·H⁺) cations incorporated into deep mol. clefts. Exclusive formation of this type of supramol. species is sensitive to the nature of the counterions. Alkali cations such as K⁺, Rb⁺, and Cs⁺ give high-yield formation of the resp. clusters while NEt₃H⁺ and NMe₄⁺ yield none of the desired products. Extension of the aufbau assembly to produce related [M₂Pd₃Cl₆L₆]⁴⁻, [M₂Pd₃I₆L₆]⁴⁻, and [M₂Cr₃(CO)₁₂L₆]⁴⁻ (M = Ti, Sn) clusters also was realized. In addition to this aufbau approach, self-assembly of several of these [M₂Pd₃Br₆L₆]⁴⁻ clusters from all eleven components (two MIV, three PdBr₂, six H₂L) was also accomplished under appropriate reaction conditions.

RX(37) OF 54 COMPOSED OF RX(1), RX(2), RX(10)
 RX(37) 2 A + B + Q ==> Y



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* STRUCTURE DIAGRAM TOO LARGE FOR DISPLAY - AVAILABLE VIA OFFLINE PRINT
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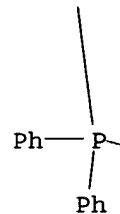
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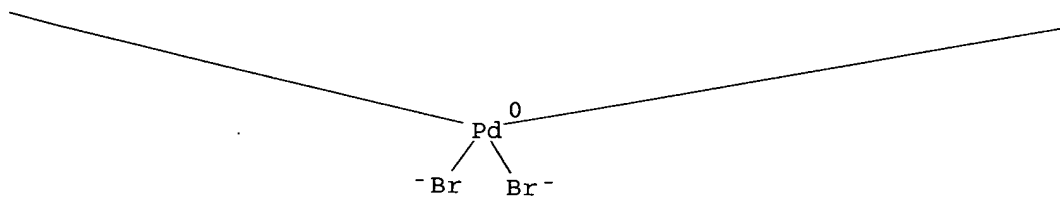
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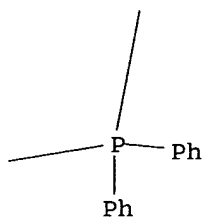
PAGE 3-A

● 4 H⁺

PAGE 3-B



PAGE 3-C



Y: CM 2
YIELD 75%

RX(1) RCT A 108-86-1

STAGE(1)

RGT D 7439-95-4 Mg
SOL 60-29-7 Et2O

STAGE(2)

RCT B 53534-49-9
SOL 60-29-7 Et2O

STAGE(3)

RGT E 7732-18-5 Water

PRO C 85417-80-7
NTE safety

RX(2) RCT C 85417-80-7
RGT H 10035-10-6 HBr
PRO G 227934-37-4
SOL 7732-18-5 Water

RX(10) RCT G 227934-37-4, Q 280-57-9
RGT T 7646-78-8 SnCl4, V 15003-43-7 Palladium,
bis(benzonitrile)dibromo-
PRO Y 334640-59-4
SOL 68-12-2 DMF

REFERENCE COUNT: 88 THERE ARE 88 CITED REFERENCES AVAILABLE
FOR THIS RECORD. ALL CITATIONS AVAILABLE
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L71 ANSWER 10 OF 27 CASREACT COPYRIGHT 2006 ACS on STN

ACCESSION NUMBER: 130:282117 CASREACT

TITLE: Reduction of a bis(chlorophenylphosphinyl)meth
ylide to the corresponding diphosphine and
tetraphosphinane

AUTHOR(S): Breitsameter, F.; Schmidpeter, A.; Noeth, H.;
Knizek, J.

CORPORATE SOURCE: Institut Anorganische Chemie, Universitaet
Muenchen, Munich, D-80333, Germany

SOURCE: Zeitschrift fuer Naturforschung, B: Chemical
Sciences (1999), 54(1), 1-7

CODEN: ZNBSEN; ISSN: 0932-0776

PUBLISHER: Verlag der Zeitschrift fuer Naturforschung

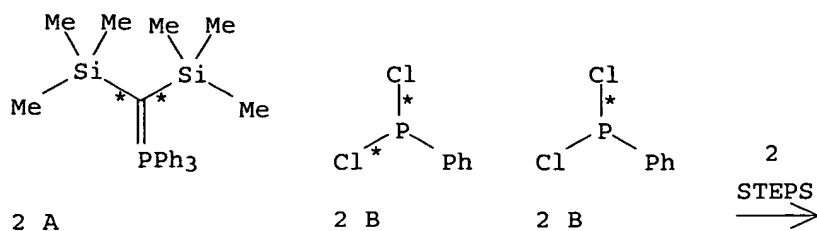
DOCUMENT TYPE: Journal

LANGUAGE: German

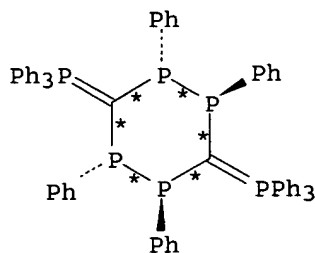
AB The bis(phosphinyl) ylides $\text{Ph}_3\text{P}:\text{C}(\text{PPh}_2)_2$, $\text{Ph}_3\text{P}:\text{C}(\text{PPhCl})_2$ (x-ray
crystallog. reported), and $\text{Ph}_3\text{P}:\text{C}(\text{PCl}_2)_2$ have analogous mol.
structures. Details reflect the different charge transfer from
the ylide center to the phosphinyl substituents. Chlorination
destroys the chirality of $\text{Ph}_3\text{P}:\text{C}(\text{PPhCl})_2$. Reduction leads to the
diphosphine $\text{Ph}_3\text{P}:\text{C}(\text{PClPh})(\text{PPh})_2\text{C}(\text{PClPh})\text{:PPh}_3$ and
1,2,4,5-tetraphenyl-3,6-bis(triphenylphosphonio)-1,2,4,5-
tetraphosphinane, the structures of which were also determined

RX(3) OF 3 COMPOSED OF RX(1), RX(2)

RX(3) 2 A + 4 B ==> E



E: CM 1
YIELD 63%



E: CM 2
YIELD 63%

RX(1) RCT A 36050-78-9, B 644-97-3
PRO C 175910-67-5
SOL 71-43-2 Benzene

RX(2) RCT C 175910-67-5
RGT F 7439-95-4 Mg
PRO E 222557-58-6
SOL 109-99-9 THF

REFERENCE COUNT: 22 THERE ARE 22 CITED REFERENCES AVAILABLE
FOR THIS RECORD. ALL CITATIONS AVAILABLE
IN THE RE FORMAT

L71 ANSWER 11 OF 27 CASREACT COPYRIGHT 2006 ACS on STN
ACCESSION NUMBER: 124:87124 CASREACT
TITLE: Synthesis, Structure, and Coordination
Properties of Silicon-Bridged Macrocycles
AUTHOR(S): Koenig, Burkhard; Roedel, Martin;
Bubenitschek, Peter; Jones, Peter G.;
Thondorf, Iris
CORPORATE SOURCE: Institut fuer Organische Chemie, Technischen
Universitaet Braunschweig, Braunschweig,
D-38106, Germany
SOURCE: Journal of Organic Chemistry (1995),

60(23), 7406-10

CODEN: JOCEAH; ISSN: 0022-3263

PUBLISHER:

American Chemical Society

DOCUMENT TYPE:

Journal

LANGUAGE:

English

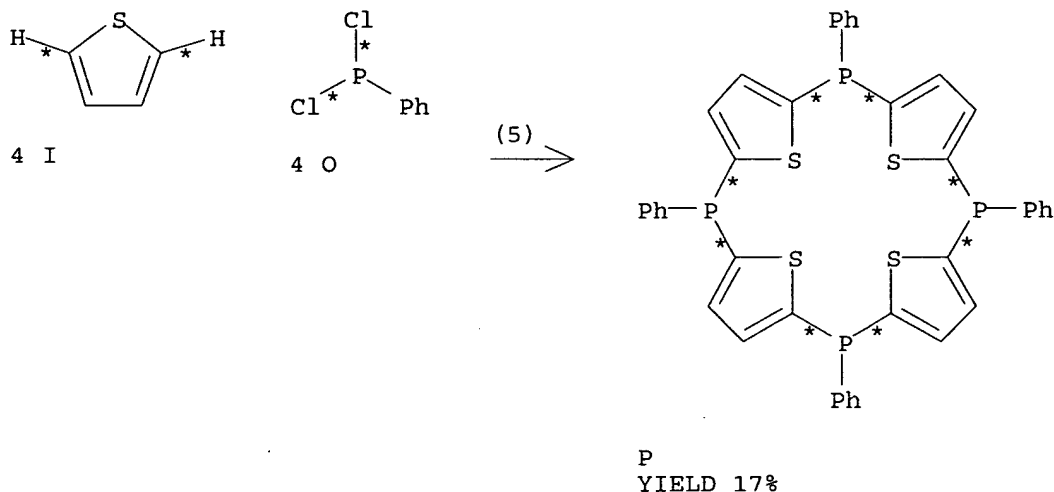
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* STRUCTURE DIAGRAM TOO LARGE FOR DISPLAY - AVAILABLE VIA OFFLINE PRINT

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AB Macrocyclic compds., e.g. I (Z = SiMe₂, X = O, S, NMe; Z = SnMe₂, X = NMe; Z = PPh, X = S) and II (X = O, S), were obtained in one step by the reaction of carbo- and heterocyclic dianions with bis-electrophiles, such as Me₂SiCl₂, Me₂SnCl₂, or PhPCl₂. P-tert-Butylmethoxybenzene as starting material affords silacalix[4]arene III. The most stable conformers of III were determined by force field calcns. A 1,3 alternate conformation in the crystal is revealed by x-ray structure anal. for the heterocyclic silacalix[4]arenes I (Z = SiMe₂; X = O and NMe), while I (Z = SiMe₂; X = S) shows a partial cone conformation. The ability of the macrocycles to extract metal ions from the aqueous phase was studied in competition expts. The tested macrocycles extract metal ions, however, with less affinity than crown ethers.

RX(5) OF 7 4 I + 4 O ==> P



RX(5) RCT I 110-02-1

STAGE(1)

RGT D 865-47-4 t-BuOK, E 109-72-8 BuLi, F

110-18-9 TMEDA

SOL 110-54-3 Hexane

STAGE(2)

RCT O 644-97-3

SOL 110-54-3 Hexane

PRO P 172752-86-2

L71 ANSWER 12 OF 27 CASREACT COPYRIGHT 2006 ACS on STN

ACCESSION NUMBER: 123:256957 CASREACT

TITLE: Oligophosphine ligands. XL.
trans-Cyclopentane-1,2-diyl-
bis(dicyclohexylphosphine) and
trans-Norbornane-2,3-diyl-
bis(dicyclohexylphosphine): synthesis and
separation of enantiomers. Reactions of
[trans-C5H8(PCy2)2]PtH(CH2CMe3) with C-H bonds
under achiral and chiral conditions

AUTHOR(S): Saare, Andrea; Dahlenburg, Lutz

CORPORATE SOURCE: Inst. Anorganische Angewandte Chemie, Univ.
Hamburg, Hamburg, D-20146, GermanySOURCE: Zeitschrift fuer Naturforschung, B: Chemical
Sciences (1995), 50(7), 1009-17
CODEN: ZNBSEN; ISSN: 0932-0776

PUBLISHER: Verlag der Zeitschrift fuer Naturforschung

DOCUMENT TYPE: Journal

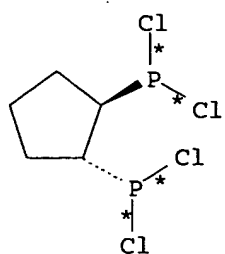
LANGUAGE: German

AB The bis(dicyclohexylphosphines) trans-C5H8(PCy2)2 (1) and
trans-C7H10(PCy2)2 (11) (C5H8 = cyclopentane-1,2-diyl, C7H10 =
norbornane-2,3-diyl) were prepared by treatment of the
bis(dichlorophosphines) trans-C5H8(PCl2)2 and trans-C7H10(PCl2)2
with CyMgBr. Oxidation with H2O2 in acetone gave the corresponding
P,P'-dioxides, trans-C5H8[P(O)Cy2]2 (2) and trans-C7H10[P(O)Cy2]2
(12) resp. Effective optical resolution of 2 was achieved using
(2S,3S)-(+)-di-O-benzoyl tartaric acid as a resolving agent.
Heating (+)-2 and (-)-2 in neat Ph2SiH2 gave enantiopure 1.
Reactions of 1 and 11 with (cyclo-C8H12)Pt(CH2CMe3)2 afforded the
dineopentyls [trans-C5H8(PCy2)2]Pt(CH2CMe3)2, 3, and
[trans-C7H10(PCy2)2]Pt(CH2CMe3)2 (13). These were further
derivatized to [trans-C5H8(PCy2)2]PtH(CH2CMe3) (5), and
[trans-C7H10(PCy2)2]PtH(CH2CMe3) (15) by consecutive acidolysis
(HCl or (1S)-(+)-camphor-10-sulfonic acid) and treatment with
Na[BH(OMe)3] of the acido(organo) intermediates
[trans-C5H8(PCy2)2]PtCl(CH2CMe3) (4) and [trans-
C7H10(PCy2)2]Pt[O3SCH2C9H13(O)-(+)]CH2CMe3 (14) (mixture of four
diastereoisomers), so obtained. Thermolysis of 5 in
cyclo-C6H12/PhC2H, C6H6, or Me3SiOSiMe3 led to smooth formation of
[trans-C5H8(PCy2)2]PtH(R), R = C2Ph (6) C6H5 (8), CH2SiMe2OSiMe3
(9), and [trans-C5H8(PCy2)2]Pt(η2-PhC.tplbond.CH) (7), resp.
Reactions of enantiopure 5, prepared from (cyclo-C8H12)Pt(CH2CMe3)2
and resolved bis(phosphine) 1 via (+)-/(-)-3 and (+)-/(-)-4, with
2,2'-dimethylbinaphthyl and 2,2'-di-t-butylbiphenyl (2 equiv in
cyclo-C6H12 at 68°) resulted in little optical induction.

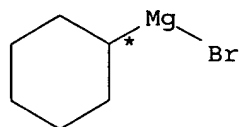
RX(77) OF 92 COMPOSED OF RX(1), RX(3), RX(4), RX(5), RX(6)

RX(77) 2 A + 8 B + 2 J + 2 S ==> T +

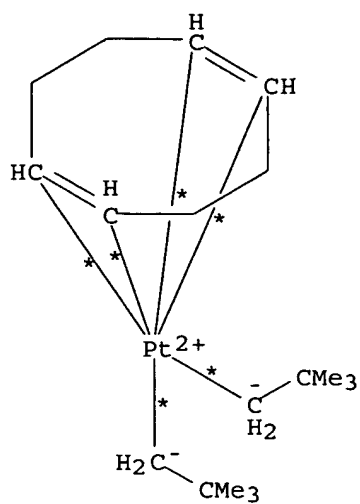
U



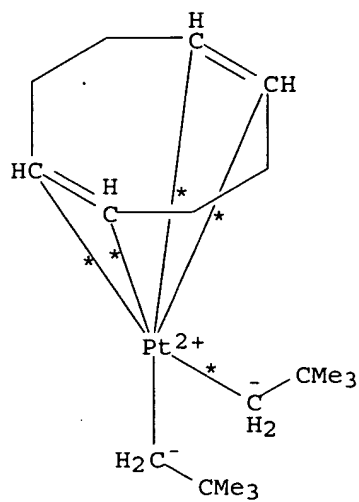
2 A



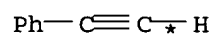
8 B



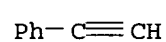
J



J

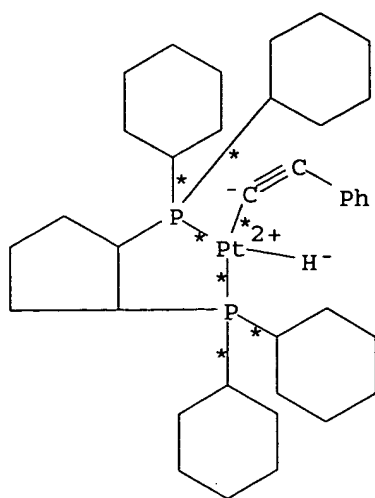


S

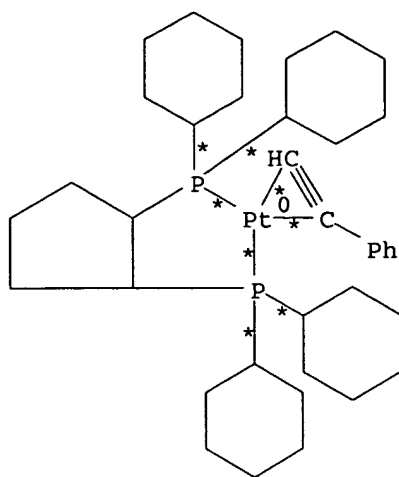


S

5
STEPS
→



T



U

RX(1) RCT A 97714-71-1, B 931-50-0

STAGE(1)

SOL 60-29-7 Et2O

STAGE(2)

RGT D 12125-02-9 NH4Cl

SOL 7732-18-5 Water

PRO C 168557-01-5

RX(3) RCT J 75101-19-8, C 168557-01-5

PRO K 168557-03-7

SOL 109-99-9 THF

RX(4) RCT K 168557-03-7

RGT N 7647-01-0 HCl

PRO M 168557-04-8

SOL 67-56-1 MeOH, 67-66-3 CHCl3

RX(5) RCT M 168557-04-8

STAGE(1)

RGT R 16940-17-3 (MeO)3BONa

SOL 109-99-9 THF

STAGE(2)

RGT F 7732-18-5 Water

PRO Q 168557-05-9

RX(6) RCT Q 168557-05-9, S 536-74-3

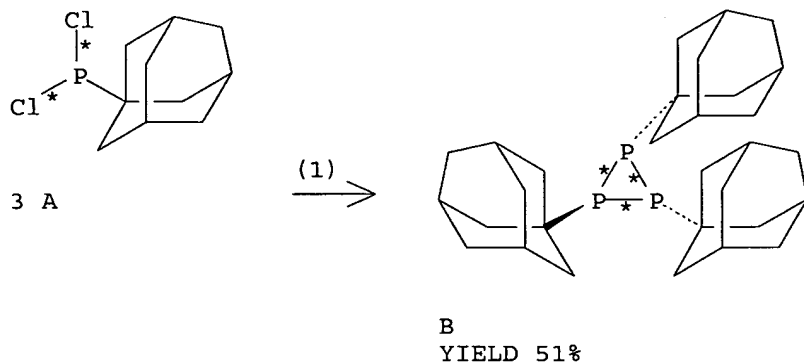
PRO T 168557-06-0, U 168557-07-1

SOL 110-82-7 Cyclohexane

L71 ANSWER 13 OF 27 CASREACT COPYRIGHT 2006 ACS on STN
 ACCESSION NUMBER: 120:298971 CASREACT
 TITLE: Tris-1-adamantylcyclotriphosphine and
 tetrakis-1-adamantylcyclotetraphosphine: two
 peradamantylated examples from the
 cyclopolyphosphine series (RP)_n
 AUTHOR(S): Goerlich, Jens R.; Schmutzler, Reinhard
 CORPORATE SOURCE: Inst. Anorg. Anal. Chem., Tech. Univ.
 Braunschweig, Braunschweig, Germany
 SOURCE: Zeitschrift fuer Anorganische und Allgemeine
 Chemie (1994), 620(1), 173-6
 CODEN: ZAACAB; ISSN: 0044-2313
 DOCUMENT TYPE: Journal
 LANGUAGE: German

AB Depending on the halogen substitution at the phosphorus atom,
 1-adamantyldihalophosphines of the type 1-AdPX₂ (X = Cl, Br) react
 with sodium to give tris-1-adamantylcyclotriphosphine (1-AdP)₃₁ (X
 = Cl) or tetrakis-1-adamantylcyclotetraphosphine (1-AdP)₄₂ (X =
 Br). The latter is also formed in the reaction of approx.
 equimolar quantities of 1-adamantylphosphine and phosgene. The
³¹P-NMR parameters are discussed and compared with those of the
 analogous tert-Bu compds.

RX(1) OF 3 3 A ==> B

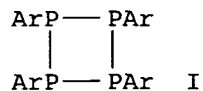


RX(1) RCT A 23906-91-4
 RGT C 7440-23-5 Na
 PRO B 154960-15-3
 SOL 108-88-3 PhMe

L71 ANSWER 14 OF 27 CASREACT COPYRIGHT 2006 ACS on STN
 ACCESSION NUMBER: 117:171675 CASREACT
 TITLE: Investigation of the dehalogenation reaction
 of (2,4-di-tert-butyl-6-
 methylphenyl)dihalophosphine with magnesium by
 phosphorus-31 CIDNP methods
 AUTHOR(S): Ionkin, A. S.; Nikolaeva, N. V.; Gainullin, R.
 M.; Il'yasov, A. V.
 CORPORATE SOURCE: A. E. Arbuzov Inst. Org. Phys. Chem., Kazan,
 420083, Russia
 SOURCE: Izvestiya Akademi Nauk, Seriya Khimicheskaya (1992), (3), 726-30

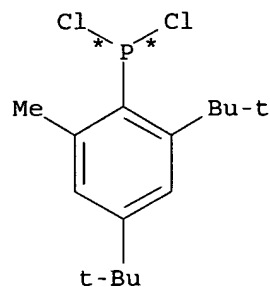
DOCUMENT TYPE:
LANGUAGE:
GI

CODEN: IASKEA; ISSN: 0002-3353
Journal
Russian

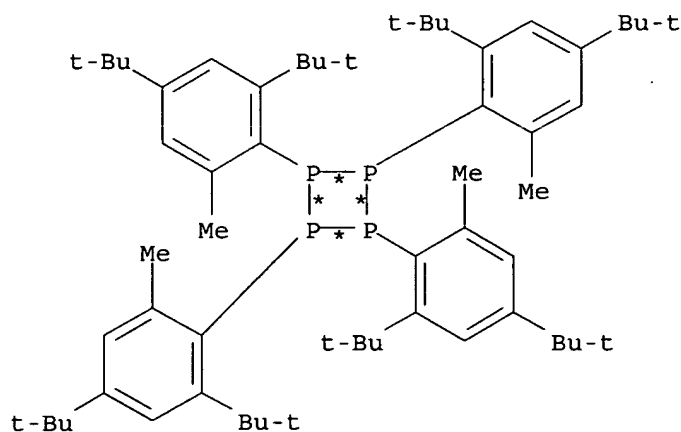


AB The title reaction gives tetraphosphacyclobutane [I; Ar = 2,4-(Me₃C)₂-6-MeC₆H₂], the dimer of the corresponding diphosphene (ArP:PAR). In diluted solns., the main product of this reaction is diphosphine [ArP(H)P(H)Ar] as a mixture of diastereomers. By using ³¹P CIDNP techniques, the free-radical nature of this reaction was established. The polarization coefficient and the rate constant of this reaction were determined

RX(1) OF 1 4 A ==> B



4 A



B
YIELD 42%

RX(1) RCT A 85028-88-2
RGT C 7439-95-4 Mg
PRO B 143851-37-0
SOL 109-99-9 THF
NTE halide assumed

L71 ANSWER 15 OF 27 CASREACT COPYRIGHT 2006 ACS on STN

ACCESSION NUMBER: 116:106448 CASREACT

TITLE: Metal π -complexes of benzene derivatives.
Part 38. Pentaphenyltriphosphine(5) as a
chelating η^{12} -ligand. Unusual formation
of an interannular-triphenylphosphine bridge
at bis(benzene)chromium

AUTHOR(S): Elschenbroich, Christoph; Sebbach, Jochen;
Metz, Bernhard

CORPORATE SOURCE: Fachbereich Chem., Philipps-Univ., Marburg,
D-3550, Germany

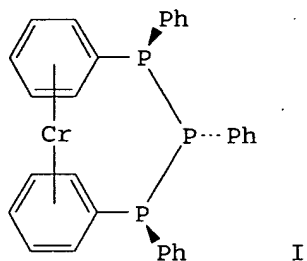
SOURCE: Helvetica Chimica Acta (1991),
74(8), 1718-24

CODEN: HCACAV; ISSN: 0018-019X

DOCUMENT TYPE: Journal

LANGUAGE: English

GI



AB [(1-6):(1'-6')- η -Pentaphenyltriphosphine(5)]chromium (I) was prepared in 2% yield by the reaction of bis(lithio- η^6 -benzene)chromium with Cl₂PPh; however, a better yield of I (16%) is obtained from bis(chloro- η^6 -benzene)chromium and K₂P₃Ph₃. I is the first sandwich complex featuring an interannular oligophosphine bridge-(PPh)_n-, $n \geq 2$; ³¹P{¹H}- and ¹H-NMR spectra suggest that the stereoisomer I-mesol is formed exclusively and that the -(PPh)₃-link in this triphospha[3]chromocyclophane is non-fluxional in the range 193 < T < 348 K.

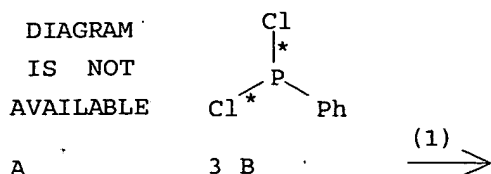
RX(1) OF 2 A + 3 B ==> C

STRUCTURE

DIAGRAM

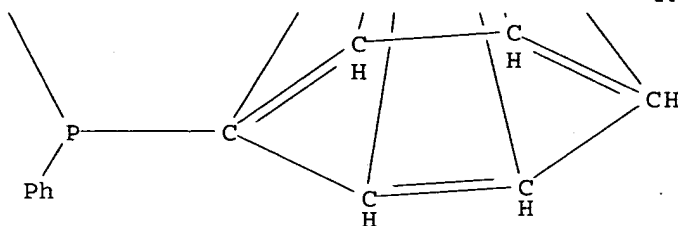
IS NOT

AVAILABLE



* STRUCTURE DIAGRAM TOO LARGE FOR DISPLAY - AVAILABLE VIA OFFLINE PRINT
*

PAGE 2-A



C

YIELD 2%

RX(1) RCT A 125594-39-0, B 644-97-3
 PRO C 139078-81-2
 SOL 110-82-7 Cyclohexane

L71 ANSWER 16 OF 27 CASREACT COPYRIGHT 2006 ACS on STN

ACCESSION NUMBER: 112:179443 CASREACT

TITLE: Synthesis and coordination chemistry of a new
 class of binucleating ligands:
 pyridyl-substituted diphosphines

AUTHOR(S): Budzelaar, Peter H. M.; Frijns, John H. G.;
 Orpen, A. Guy

CORPORATE SOURCE: K./Shell-Lab., Amsterdam, 1003 AA, Neth.

SOURCE: Organometallics (1990), 9(4), 1222-7

CODEN: ORGND7; ISSN: 0276-7333

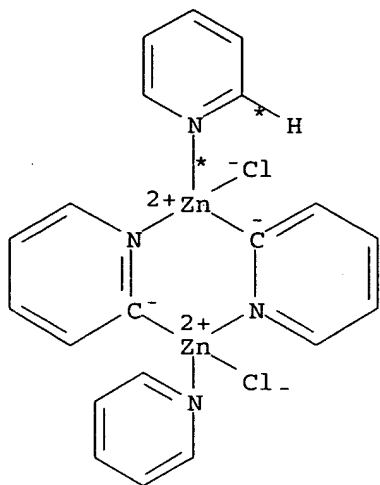
DOCUMENT TYPE: Journal

LANGUAGE: English

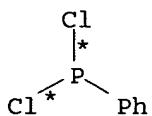
AB The synthesis of 3 new binucleating ligands, Ph(2-C₅H₄N)P(CH₂)_nPPh(2-C₅H₄N) (n = 1, DPyPM; n = 2, DPyPE; n = 3, DPyPP), are described and their coordination properties have been probed. rac-DPyPM reacts with [Rh(CO)₂Cl]₂ to produce a binuclear complex DPyPM[Rh(CO)Cl]₂, in which the ligand forms 3 bridges (determined by x-ray diffraction) shows 2 approx square-planar rhodium centers with a (nonbonded) Rh-Rh distance of 3.093 (1) Å. The meso isomers of DPyPE and DPyPP reacts with [Rh(CO)₂Cl]₂ to give [L₂Rh₂Cl₂][Rh(CO)₂Cl]₂; the structure of the DPyPP complex was determined by x-ray crystallog. In the complex cation, each rhodium atom is surrounded in an octahedral fashion by 2 phosphorous atoms of one DPyPP ligand, two pyridyl nitrogens of the 2nd DPyPP, the second rhodium atom [Rh-Rh = 2.651 (3) Å], and a chlorine atom

trans to Rh.

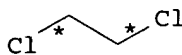
RX(17) OF 24 COMPOSED OF RX(4), RX(7), RX(3)
 RX(17) 4 I + 4 J + 2 U + B ==> H



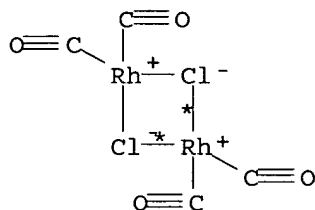
4 I



4 J

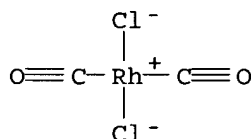


2 U



B

3
STEPS
→



H: CM 1

* STRUCTURE DIAGRAM TOO LARGE FOR DISPLAY - AVAILABLE VIA OFFLINE PRINT
 *

RX(4) RCT I 126111-73-7, J 644-97-3
 PRO K 123133-51-7
 SOL 110-86-1 Pyridine, 109-99-9 THF

RX(7) RCT K 123133-51-7

STAGE(1)

RGT S 7440-23-5 Na, T 1625-91-8 (p-t-BuC6H4)2
 SOL 109-99-9 THF

STAGE(2)

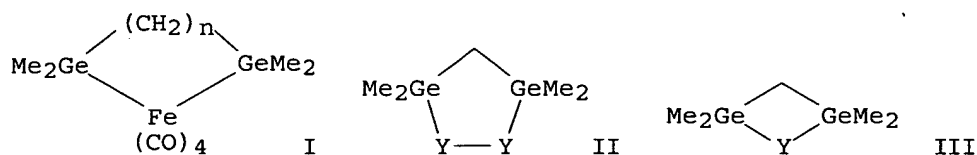
RCT U 107-06-2

PRO G 123133-46-0

RX(3) RCT G 123133-46-0, B 14523-22-9
 PRO H 126111-72-6
 SOL 109-99-9 THF

L71 ANSWER 17 OF 27 CASREACT COPYRIGHT 2006 ACS on STN

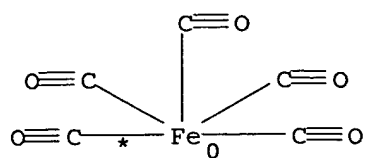
ACCESSION NUMBER: 111:39530 CASREACT
 TITLE: Bis(dimethylgermyl)alkane-iron tetracarbonyls:
 synthesis, photolysis, and reactivity
 AUTHOR(S): Barrau, Jacques; Ben Hamida, Najib; Agrebi,
 Abdelhamid; Satge, Jacques
 CORPORATE SOURCE: Lab. Chim. Organominer., Univ. Paul Sabatier,
 Toulouse, 31062, Fr.
 SOURCE: Organometallics (1989), 8(7),
 1585-93
 CODEN: ORGND7; ISSN: 0276-7333
 DOCUMENT TYPE: Journal
 LANGUAGE: English
 GI



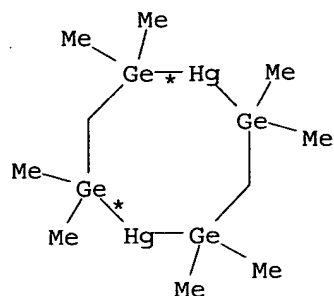
AB The preparation, spectroscopic anal., and reactivity of tetracarbonyliron bis(dimethylgermyl)alkanes (I, $n = 1, 2$) were examined. These heterocycles were prepared by cyclization of bis(dimethylgermyl)alkanes $\text{Me}_2\text{HGe}(\text{CH}_2)_n\text{GeHMe}_2$ ($n = 1, 2$) with $\text{Fe}(\text{CO})_5$ under UV irradiation. I are stable at room temperature, but I ($n = 1$) decomps. under prolonged UV irradiation with formation of the heterocycle with $n = 2$, perhydrotetragermin and $(\text{CO})_3\text{Fe}(\mu\text{-GeMe}_2)_3\text{Fe}(\text{CO})_3$. Various CO substitution reactions with phosphines and cleavage reactions with organic and organometallic halides are described; they provide a convenient procedure for the generation of germanium- or tin-carbonyliron clusters. Reactions of I ($n = 1$) with sulfur and with oxygen presumably leads first to the dithia- (or dioxo-) digermolanes II ($\text{Y} = \text{S}$ or O) and after, by sulfur (or oxygen) loss, to thia- (or oxa-) digermetanes III ($\text{Y} = \text{S}$ or O), which are unstable, giving products suggestive of Me_2GeY ($\text{Y} = \text{O}$ or S) and $\text{Me}_2\text{Ge}:\text{CH}_2$ intermediates.

RX(82) OF 203 COMPOSED OF RX(16), RX(33)

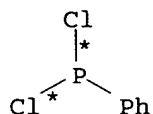
RX(82) P + AL + 5 BV ==> BS + BW



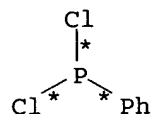
P



AL

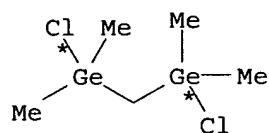


2 BV

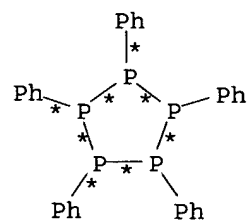


3 BV

2
STEPS
→



BS



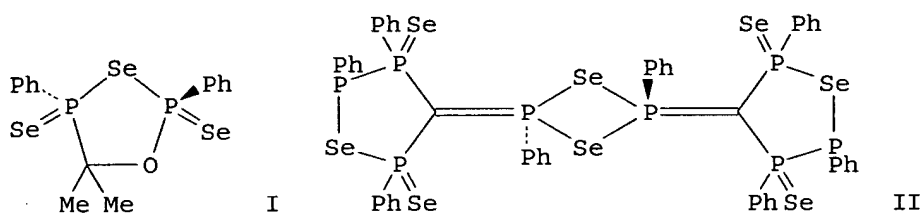
BW

YIELD 82%

RX(16) RCT P 13463-40-6, AL 106651-95-0
 PRO A 120926-68-3
 SOL 109-66-0 Pentane
 NTE photochem.

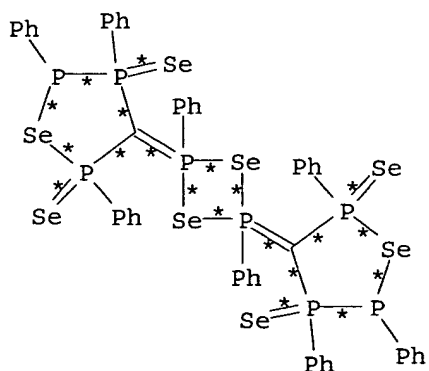
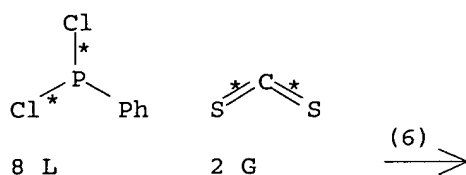
RX(33) RCT A 120926-68-3, BV 644-97-3
 PRO BS 98187-50-9, BW 3376-52-1
 SOL 71-43-2 Benzene

L71 ANSWER 18 OF 27 CASREACT COPYRIGHT 2006 ACS on STN
 ACCESSION NUMBER: 110:231879 CASREACT
 TITLE: Organophosphorus-selenium heterocycles
 AUTHOR(S): Fitzmaurice, Jonathan C.; Williams, David J.;
 Wood, Paul T.; Woollins, J. Derek
 CORPORATE SOURCE: Dep. Chem., Imp. Coll. Sci. Technol., London,
 SW7 2AY, UK
 SOURCE: Journal of the Chemical Society, Chemical
 Communications (1988), (11), 741-3
 CODEN: JCCCCAT; ISSN: 0022-4936
 DOCUMENT TYPE: Journal
 LANGUAGE: English
 GI



AB Reaction of Se with $(\text{PhP})_5$, or Li_2Se with PhPCl_2 , gives a reactive intermediate which reacts with Me_2CO or CS_2 to give new organophosphorus-selenium heterocycles I and II, resp., which were characterized by x-ray crystallog.

RX(6) OF 6 8 L + 2 G ==> F



F

RX(6) RCT L 644-97-3

STAGE(1)

RGT M 12136-60-6 Lithium selenide (Li₂Se)

SOL 109-99-9 THF

STAGE(2)

RCT G 75-15-0

PRO F 120875-48-1

L71 ANSWER 19 OF 27 CASREACT COPYRIGHT 2006 ACS on STN

ACCESSION NUMBER: 110:173351 CASREACT

TITLE: Unusually coordinated phosphorus compounds.
 Part 28. Bis- and tris(diazomethyl)phosphines
 - new building blocks for the synthesis of
 phosphorus heterocycles

AUTHOR(S): Keller, Harald; Regitz, Manfred

CORPORATE SOURCE: Dep. Chem., Univ. Kaiserslautern,
Kaiserslautern, D-6750, Fed. Rep. Ger.SOURCE: Tetrahedron Letters (1988), 29(8),
925-8

CODEN: TELEAY; ISSN: 0040-4039

DOCUMENT TYPE: Journal

LANGUAGE: English

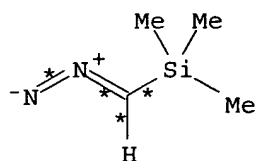
GI For diagram(s), see printed CA Issue.

AB Lithiation of Me₃SiC(:N₂)H with LiN(CHMe₂)₂ followed by treatment
 with RPCL₂ [R = Ph, Me, CMe₃, N(CHMe₂)₂] gave RP[C(SiMe₃)(:N₂)]₂
 (I). Similarly P[C(SiMe₃)(:N₂)]₃ (II) was also prepared by
 treatment with PCl₃. Heating I at 50° in C₆H₆ gave
 diazaphospholes III. [3 + 2] Cycloaddn. reaction of I (R = Ph)
 and II with Me₃C.tplbond.P gave heterocycles IV and V.
 Cyclocondensation reactions of IV with PhPCl₂ or SiCl₄ and V with
 MCl₃ (M = P, As, Sb), MeSiCl₃, or MeGeCl₃ proceeded with the
 elimination of Me₃SiCl to give heterocycles e.g., VI.

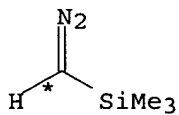
RX(32) OF 38 COMPOSED OF RX(1), RX(9), RX(10)

RX(32) 4 A + 4 B + 4 Q ==> S +

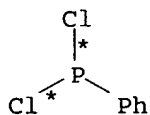
T



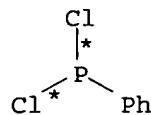
2 A



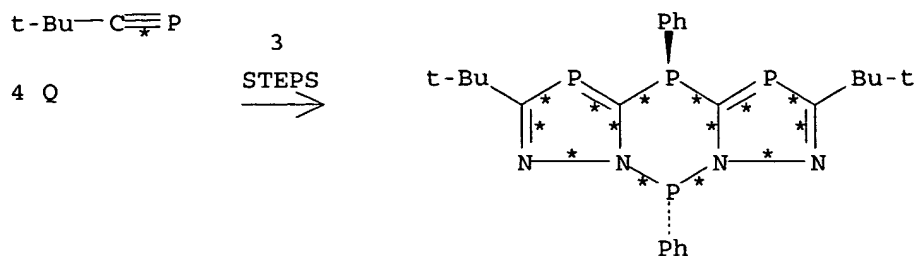
2 A



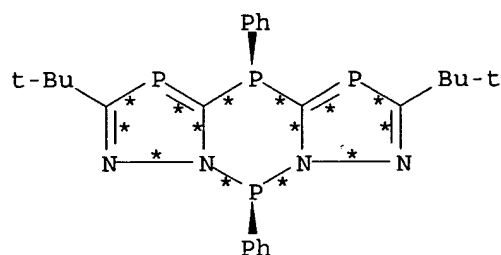
B



3 B



S
YIELD 76%



T
YIELD 15%

RX(1) RCT A 18107-18-1

STAGE(1)

RGT D 4111-54-0 LiN(Pr-i)₂

SOL 60-29-7 Et₂O

STAGE(2)

RCT B 644-97-3

PRO C 119987-44-9

RX(9) RCT C 119987-44-9, Q 78129-68-7

PRO R 119987-52-9

SOL 60-29-7 Et₂O

RX(10) RCT R 119987-52-9, B 644-97-3

PRO S 119987-53-0, T 119987-54-1

SOL 75-09-2 CH₂Cl₂

L71 ANSWER 20 OF 27 CASREACT COPYRIGHT 2006 ACS on STN

ACCESSION NUMBER: 109:93296 CASREACT

TITLE: Phosphorus double functionalization by template condensations. Formation of P-C and P-O bonds from metallocycles. Synthesis and crystal structure of cis-cyclo[PdCl₂(Ph₂PCHCPhOPPh)(o-C₆H₄CH₂NMe₂H)]Cl

AUTHOR(S): Braunstein, Pierre; Matt, Dominique; Nobel,

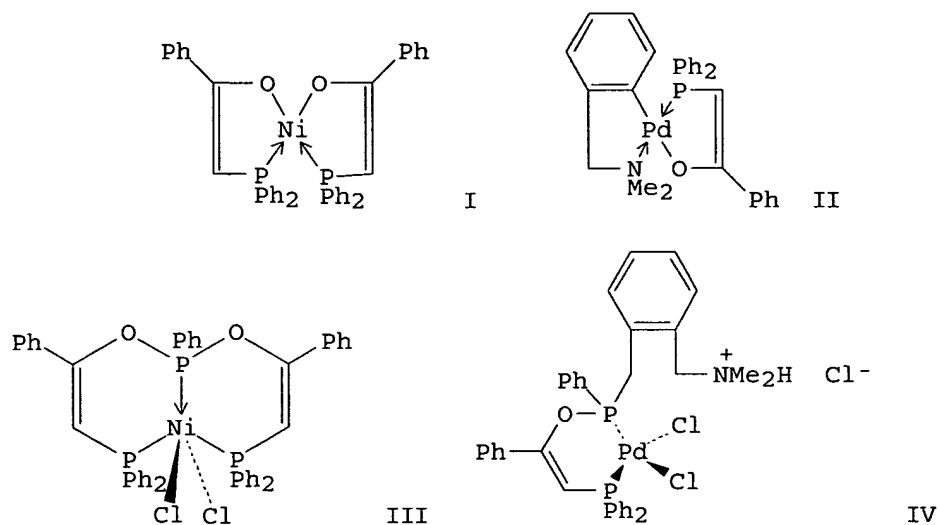
CORPORATE SOURCE: Dominique; Fischer, Jean
Lab. Chim. Coord., Univ. Louis Pasteur,
Strasbourg, F-67070, Fr.

SOURCE: Journal of the Chemical Society, Chemical
Communications (1987), (20), 1530-2
CODEN: JCCCCAT; ISSN: 0022-4936

DOCUMENT TYPE: Journal

LANGUAGE: English

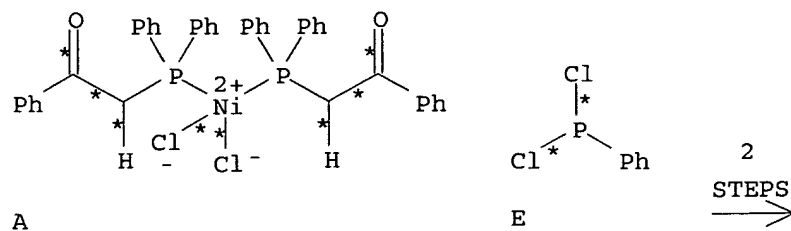
GI

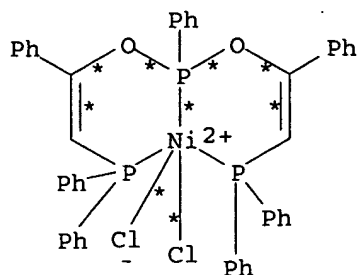


AB The air-stable bis-chelate complexes I and II react smoothly with 1 equiv of PhPCl_2 to afford coupling products III and IV, resp., involving the O atom of the enolate ligand and the Pd-bound C atom of the cyclometalated ligand. The crystal structure was determined for bis-chelate palladium cationic complex IV.

RX(5) OF 5 COMPOSED OF RX(1), RX(2)

RX(5) A + E ==> F





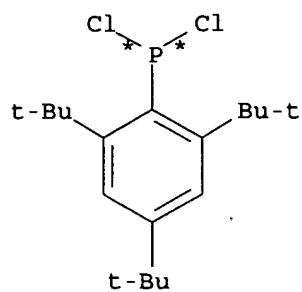
F
YIELD 83%

RX(1) RCT A 113693-92-8
RGT C 141-52-6 NaOEt
PRO B 97954-27-3
SOL 64-17-5 EtOH

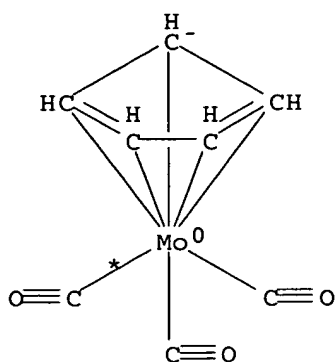
RX(2) RCT B 97954-27-3, E 644-97-3
RGT G 110-86-1 Pyridine
PRO F 113718-83-5
SOL 109-99-9 THF

L71 ANSWER 21 OF 27 CASREACT COPYRIGHT 2006 ACS on STN
ACCESSION NUMBER: 107:176172 CASREACT
TITLE: A novel diphosphorus-molybdenum ring system
AUTHOR(S): Arif, Atta M.; Cowley, Alan H.; Pakulski, Marek; Thomas, Gillian J.
CORPORATE SOURCE: Dep. Chem., Univ. Texas, Austin, TX, 78712, USA
SOURCE: Polyhedron (1986), 5(10), 1651-3
CODEN: PLYHDE; ISSN: 0277-5387
DOCUMENT TYPE: Journal
LANGUAGE: English
GI For diagram(s), see printed CA Issue.
AB The reaction of ArPCl_2 ($\text{Ar} = 2,4,6\text{-(Me}_3\text{C)}_3\text{C}_6\text{H}_2$) with $\text{K}[\text{Mo}(\text{CO})_3(\eta\text{-C}_5\text{H}_5)]$ affords Ar(H)PP(Cl)Ar , I, ArP:PAr , ArPH_2 and Ar(H)PP(H)Ar . By means of X-ray crystallog., it was established that the Mo_2P ring of I involves a planar P geometry, a slight degree of Mo-P multiple bonding, and a Mo-Mo single bond. Thermolysis of the original reaction mixture produced the P_2Mo ring compound II. The structure of II was determined by X-ray diffraction.

RX(3) OF 4 3 D + 3 B ==> E + C



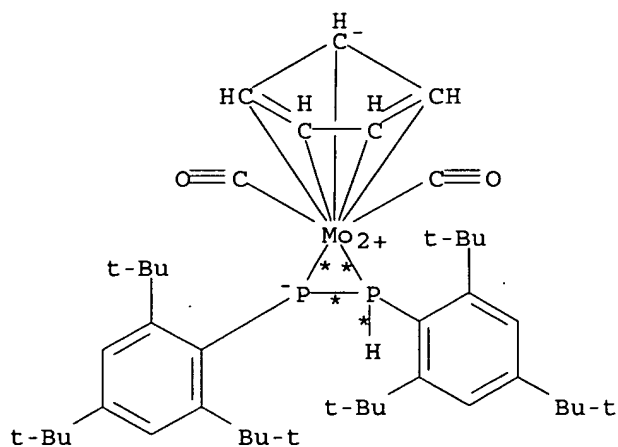
3 D

● K⁺

3 B

(3) →

* STRUCTURE DIAGRAM TOO LARGE FOR DISPLAY - AVAILABLE VIA OFFLINE PRINT
*



C

RX(3) RCT D 79074-00-3, B 62866-01-7
PRO E 110658-93-0, C 110591-38-3
SOL 109-99-9 THF
NTE Thermolysis

L71 ANSWER 22 OF 27 CASREACT COPYRIGHT 2006 ACS on STN
ACCESSION NUMBER: 107:134426 CASREACT
TITLE: Reaction of bulky monosubstituted
phosphorus(III) halides with disodium
pentacarbonylchromate. Steric and electronic
factors in the synthesis of Cr(CO)₅ complexes

of diphosphenes, phosphinidenes, phosphanes, diphosphanes, and cyclopolyphosphanes

AUTHOR(S): Bartlett, Ruth A.; Dias, H. V. Rasika; Flynn, Kathy M.; Hope, Hakon; Murray, Brendan D.; Olmstead, Marilyn M.; Power, Philip P.

CORPORATE SOURCE: Dep. Chem., Univ. California, Davis, CA, 95616, USA

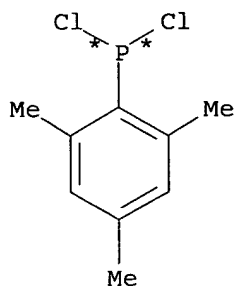
SOURCE: Journal of the American Chemical Society (1987), 109(19), 5693-8
CODEN: JACSAT; ISSN: 0002-7863

DOCUMENT TYPE: Journal

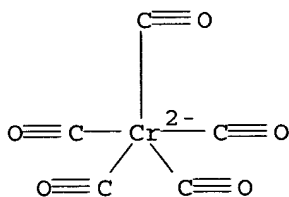
LANGUAGE: English

AB Reaction of $\text{Na}_2\text{Cr}(\text{CO})_5$ with title compds. RPCl_2 [R = mesityl, Me_3SiCH_2 , $(\text{Me}_3\text{Si})_2\text{CH}$, $(\text{Me}_3\text{Si})_2\text{N}$, 4,2,6-Me(Me_3C) $2\text{C}_6\text{H}_2\text{O}$] gave ≥ 9 different types of products with diphosphene, phosphinidene, phosphine, diphosphine, and cyclopolyphosphine ligands. The products depended markedly on the size and electronic properties of the substituent on P. The synthesis and properties of 12 compds. are described, of which 10 were characterized structurally by x-ray crystallog. IR and ^{31}P NMR data are also reported.

RX(1) OF 6 8 A + 7 B ==> C + D +
 E + F



8 A



7 B

(1)
→

* STRUCTURE DIAGRAM TOO LARGE FOR DISPLAY - AVAILABLE VIA OFFLINE PRINT

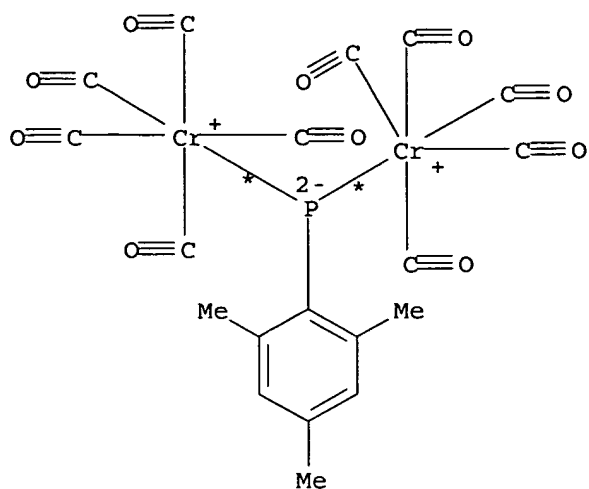
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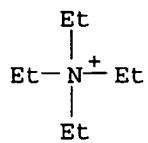
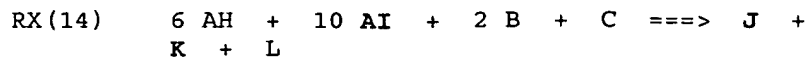
F
YIELD 18%

RX(1) RCT A 6781-96-0, B 51233-19-3
PRO C 109835-96-3, D 104469-72-9, E 109744-80-1, F
104453-47-6
SOL 60-29-7 Et2O

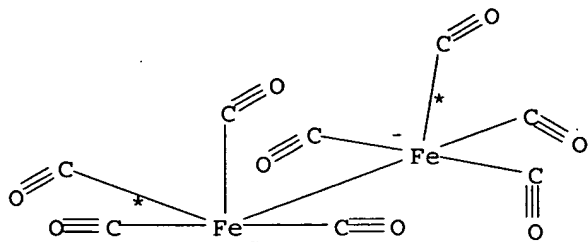
L71 ANSWER 23 OF 27 CASREACT COPYRIGHT 2006 ACS on STN
ACCESSION NUMBER: 106:176600 CASREACT
TITLE: Syntheses of new iron-phosphorus cage
compounds
AUTHOR(S): De, Rajib Lal; Vahrenkamp, Heinrich
CORPORATE SOURCE: Inst. Anorg. Anal. Chem., Univ. Freiburg,
Freiburg, D-7800, Fed. Rep. Ger.
SOURCE: Zeitschrift fuer Naturforschung, Teil B:
Anorganische Chemie, Organische Chemie (1986), 41B(3), 273-82
CODEN: ZNBAD2; ISSN: 0340-5087
DOCUMENT TYPE: Journal
LANGUAGE: German

AB Four reaction types were used with the aim of obtaining new cage compds. $\text{Fe}_x(\text{CO})_y(\text{PR})_z$ [$\text{R} = \text{Me}, \text{Ph}, \text{tolyl (Q)}$]: oxidation of $\text{Fe}_2(\text{CO})_6(\text{PHR})_2$, photolysis thereof, reaction between RPCl_2 and $\text{Fe}(\text{CO})_5$, and reaction between P-Cl containing iron complexes and $\text{Fe}(\text{CO})_5$. Besides several known products, e.g., $\text{Fe}_3(\text{CO})_9(\text{PR})_2$ or $\text{Fe}_4(\text{CO})_{11}(\text{PR})_2$, and derivs. of the $\text{Fe}_2(\text{CO})_6(\text{PRX})_2$ butterfly type complexes, the new octabisvalene shaped compds. $\text{Fe}_4(\text{CO})_{12}(\text{PR})_4$ were obtained and confirmed by a crystal structure anal. for $\text{R} = \text{Me}$. Side products of the oxidative conversions were $\text{Fe}_4(\text{CO})_{12}(\text{P}_2\text{Me}_2)(\text{MePC}_2\text{H}_4\text{PMe})$ and $\text{Fe}_4(\text{CO})_{12}(\text{P}_2\text{Q}_2)(\text{PHQ})_2$ which can be derived from the octabisvalene type. Side products of the irradiative conversions were $\text{Fe}_3(\text{CO})_8(\text{PPh})(\text{PPh})_2$ and $(\text{OC})_3\text{Fe}(\mu\text{-PPh})_2\text{Fe}(\text{CO})(\text{C}_6\text{H}_8)$, the structure of the latter being proved crystallog.

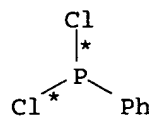
RX(14) OF 17 COMPOSED OF RX(11), RX(2)



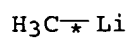
6 AH: CM 1



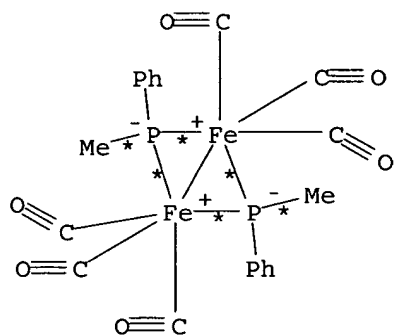
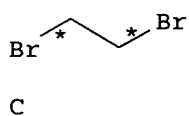
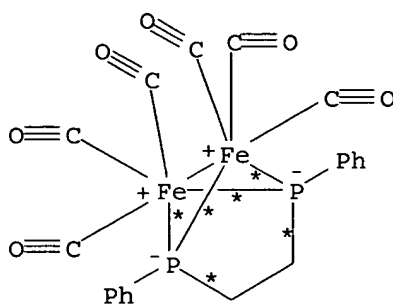
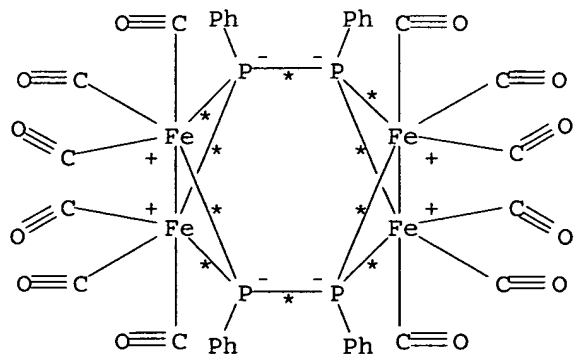
6 AH: CM 2



10 AI



2 B

J
YIELD 9%K
YIELD 18%L
YIELD 12%

RX(11) RCT AH 26024-88-4, AI 644-97-3
PRO I 39049-79-1, Y 38903-71-8, AJ 81191-38-0
SOL 109-99-9 THF

RX(2) RCT I 39049-79-1, B 917-54-4

STAGE(1)
SOL 60-29-7 Et2O

STAGE(2)
RCT C 106-93-4
SOL 60-29-7 Et2O

PRO J 75684-20-7, K 107710-27-0, L
107710-28-1

L71 ANSWER 24 OF 27 CASREACT COPYRIGHT 2006 ACS on STN

ACCESSION NUMBER: 106:156566 CASREACT

TITLE: Organophosphorus compounds. XXIII. Alkenyl
substituted amino- or halophosphines and
attempts to trap phosphinidene
intramolecularly

AUTHOR(S): Diemert, Klaus; Kottwitz, Beatrix; Kuchen,
Wilhelm

CORPORATE SOURCE: Inst. Anorg. Chem. Strukturchem., Univ.
Duesseldorf, Duesseldorf, D-4000/1, Fed. Rep.
Ger.

SOURCE: Phosphorus and Sulfur and the Related Elements
(1986), 26(3), 307-20

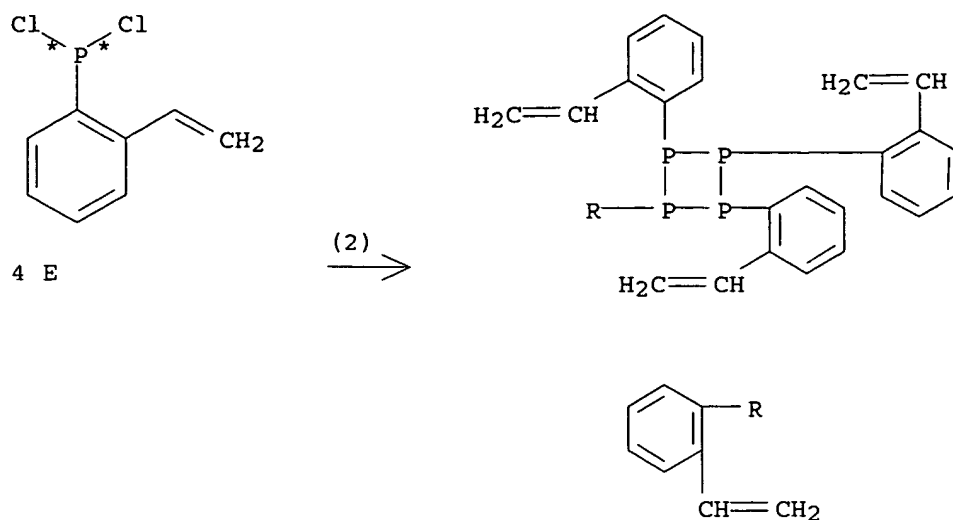
CODEN: PREEDF; ISSN: 0308-664X

DOCUMENT TYPE: Journal

LANGUAGE: German

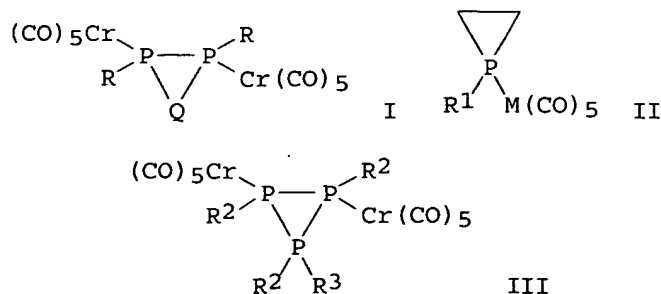
AB RP(Net2)2 and R2P(Net2), obtained from RMgX (R = H2C:CH,
H2C:CHCH2, o-(H2C:CH)C6H4, o-(H2C:CHCH2)C6H4) and
aminochlorophosphines, reacted smoothly with HX to give RPX2 and
R2PX (X = Cl, Br). Properties and reactions of some of these
compds., e.g. with S8, H2O, H2O2, and LiAlH4 are reported. On
reaction of RPX2 with Mg only alkenylcyclophosphines (RP)n were
obtained whereas heterocycles as possible products of an intramol.
reaction of intermediately formed phosphinidenes were not observed

RX(2) OF 50 ...4 E ==> F

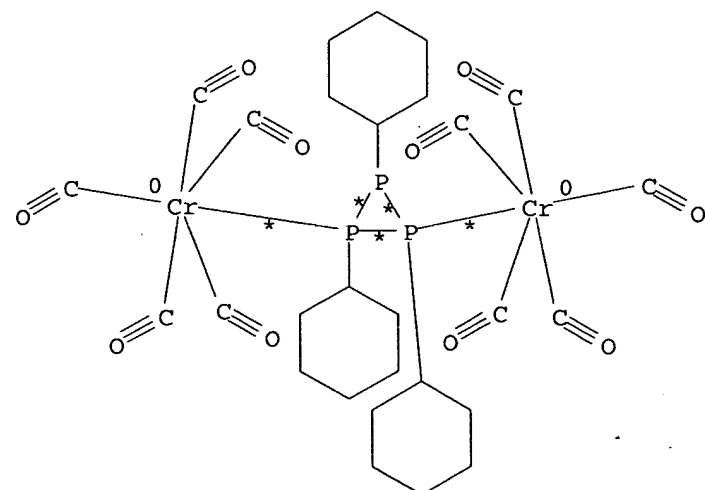


RX(2) RCT E 107531-51-1
 RGT C 7439-95-4 Mg
 PRO F 107531-66-8
 SOL 109-99-9 THF

L71 ANSWER 25 OF 27 CASREACT COPYRIGHT 2006 ACS on STN
 ACCESSION NUMBER: 106:102409 CASREACT
 TITLE: Preparation of three-membered phosphorus
 containing ring ligands from phosphinidene and
 diphosphene complexes
 AUTHOR(S): Borm, Jutta; Huttner, Gottfried; Orama, Olli
 CORPORATE SOURCE: Fak. Chem., Univ. Konstanz, Konstanz, D-7750,
 Fed. Rep. Ger.
 SOURCE: Journal of Organometallic Chemistry (
 1986), 306(1), 29-38
 CODEN: JORCAI; ISSN: 0022-328X
 DOCUMENT TYPE: Journal
 LANGUAGE: German
 GI



RX (6) OF 6 P + 3 T ==> U



USHA SHRESTHA EIC 1600 REM 1A64

RX(6) RCT P 15616-67-8, T 2844-89-5

STAGE(1)

SOL 109-99-9 THF

STAGE(2)

SOL 108-88-3 PhMe, 75-09-2 CH₂Cl₂

PRO U 106828-38-0

L71 ANSWER 26 OF 27 CASREACT COPYRIGHT 2006 ACS on STN

ACCESSION NUMBER: 105:226691 CASREACT

TITLE: The synthesis of metallaindene and
matallafluorene compounds.

AUTHOR(S): Rausch, M. D.; Klemann, L. P.; Boon, W. H.

CORPORATE SOURCE: Dep. Chem., Univ. Massachusetts, Amherst, MA,
01003, USA

SOURCE: Synthesis and Reactivity in Inorganic and
Metal-Organic Chemistry (1985),
15(7), 923-43

CODEN: SRIMCN; ISSN: 0094-5714

DOCUMENT TYPE: Journal

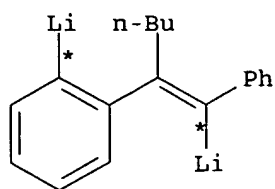
LANGUAGE: English

AB The synthesis, spectra and properties of a series of metallaindenes (benzometalloles) and metallafluorenes (dibenzometalloles) have been investigated. Improved procedures for the formation of 1-lithio-1-phenyl-2-butyl-2-(2-lithiophenyl)ethene from a reaction between BuLi and diphenylacetylene have been achieved. Reactions of this dilithium intermediate with dimethyl- and diphenyldichlorosilane have afforded the resp. benzosiloles in good yield. Reactions of the dilithium reagent with either dimethyltin dichloride or phenyldichlorophosphine produce the resp. benzostannole and benzophosphole, whereas reactions with MCl₄ (M = Si, Ge, Sn) result in formation of the corresponding metallacycles. Treatment of the benzophosphole with (η^5 -C₅H₅)Co(CO)₂ or Fe₃(CO)₁₂ affords new organocobalt and -iron complexes which contain the benzophosphole ligand. The dilithium intermediate 1-lithio-1,2-diphenyl-2-(2-lithiophenyl)ethene, prepared from PhLi and diphenylacetylene, reacts with titanocene dichloride to produce a benzotitanole identical with the product isolated earlier from the thermolysis of (η^5 -C₅H₅)₂Ti(C₆H₅)₂ and diphenylacetylene. Reactions between 2,2'-dilithiobiphenyl and titanocene dichloride or Me₂SnCl₂ result in formation of the resp. dibenzotitanole and dibenzostannole.

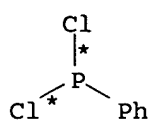
RX(22) OF 23 COMPOSED OF RX(11), RX(19)

RX(22) 3 K + 3 V + 2 AO ==> AP +

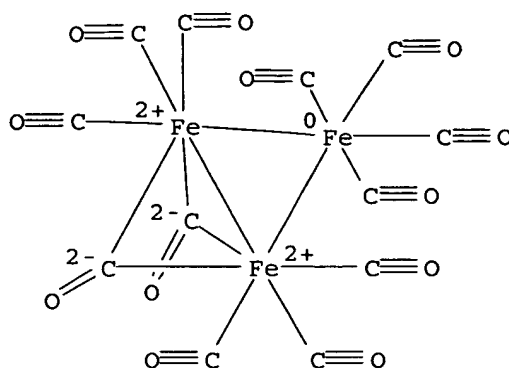
AQ



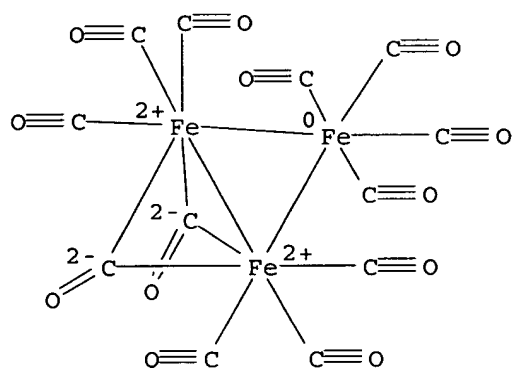
3 K



3 V

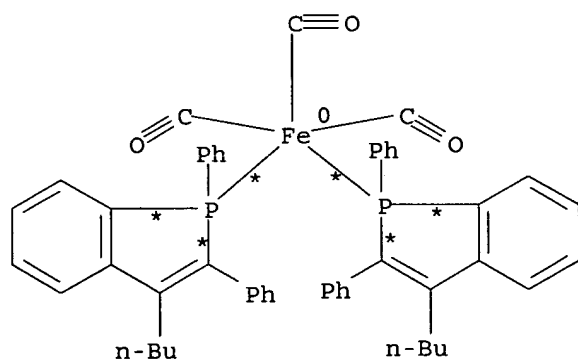


AO

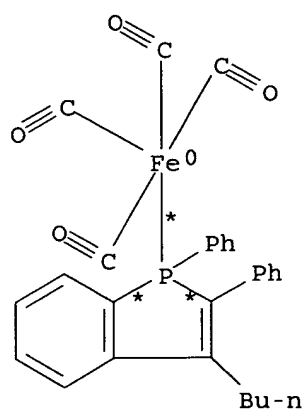


AO

2
STEPS
→



AP



AQ

RX(11) RCT K 35779-22-7, V 644-97-3
PRO W 18104-86-4

SOL 110-54-3 Hexane, 109-99-9 THF, 60-29-7 Et2O

RX(19) RCT W 18104-86-4, AO 17685-52-8
 PRO AP 105445-27-0, AQ 104452-78-0
 SOL 71-43-2 Benzene, 108-88-3 PhMe

L71 ANSWER 27 OF 27 CASREACT COPYRIGHT 2006 ACS on STN

ACCESSION NUMBER: 103:215392 CASREACT

TITLE: Pentamethylcyclopentadienyl substituted
 diphosphene, bicyclo[1.1.0]tetraphosphane,
 cyclotetraphosphane and cyclotriphosphanes
 from dihalo(pentamethylcyclopentadienyl)phosph

AUTHOR(S): Jutzi, P.; Wippermann, T.

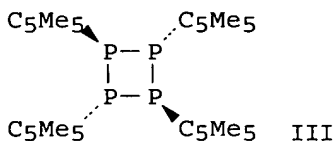
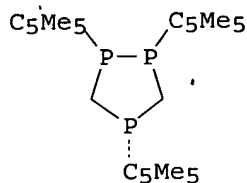
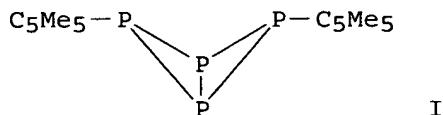
CORPORATE SOURCE: Fak. Chem., Univ. Bielefeld, Bielefeld,
 D-4800/1, Fed. Rep. Ger.

SOURCE: Journal of Organometallic Chemistry (
 1985), 287(1), C5-C7
 CODEN: JORCAI; ISSN: 0022-328X

DOCUMENT TYPE: Journal

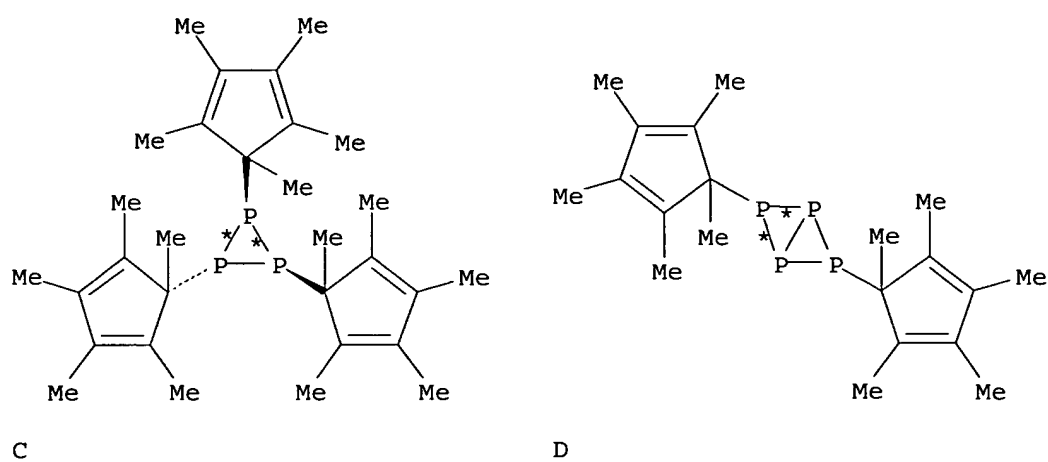
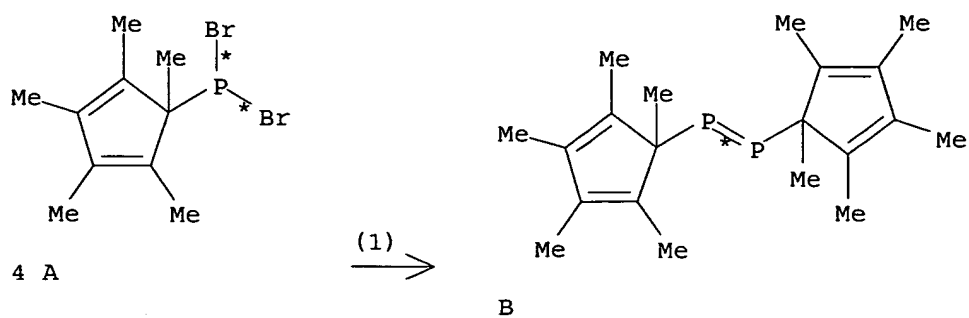
LANGUAGE: English

GI



AB Treating (C5Me5)PX2 (X = Cl, Br) with reducing agents such as Li,
 Li naphthalenide, K or Mg in THF between -80° and room
 temperature gave a variety of P-containing products. Thus, reaction of
 (C5Me5)PBr2 with Mg in THF gave (C5Me5)P:P(C5Me5), the bicyclic
 compds. I, and the cyclotriphosphane II. Also, treating
 (C5Me5)PH2 with NEt3/Et2O/MeCN or TMEDA/EtO/MeCN gave I and the
 cyclotetraphosphane III.

RX(1) OF 7 4 A ==> B + C + D



RX(1) RCT A 61861-07-2
 RGT E 7439-95-4 Mg
 PRO B 99222-12-5, C 99222-13-6, D 99222-16-9
 SOL 109-99-9 THF